Nats ‘19 Blockfile

A2 AFF

A2 FinTech

1. Defense. Myers '17 of Forbes writes that current big financial institutions do not think FinTech has the ability to outcompete them or even take significant market share from them because it is hard to enter and dominate finance due to the heavy regulation in the financial industry and the significant infrastructure needed to become a prominent financial institution. This means that large banks won't even try to outcompete FinTech.
2. Defense. Sipa '18 writes that the reason for FinTech's popularity and success is their transparency and their popular apps that allow users to access their bank accounts. Obviously, this means large financial institutions are going to try to outcompete FinTech by emulating their apps and transparency because it gets rid of the reason people have to switch to FinTech. In fact, True North, a market research firm, in 2018 writes that rather than competing with big banks FinTech firms are partnering with big financial institutions because big banks want to use the innovative technology that FinTech provides and FinTech want access to the large financial infrastructure that big banks have. Moreover, The Financial Stability '19 writes that FinTech firms do not have sufficient access to low-cost funding and a large consumer base which is why they can only survive by partnering with big banks.
3. Defense. Schroeder '19 of Reuters writes that the Federal Reserve is wary of giving FinTech access to the country's financial infrastructure like payment systems, settlement services, and other Fed tools. Without these tools, FinTech will lack the ability to expand nationwide and won't be able to compete with large banks.
4. Defense. If they wanted to outcompete banks they would more likely lower interest rates and make it easier to pay back credit card debt. Banks would definitely not become more risky because becoming risky would just get them terrible media attention and if they cause any economic turmoil everyone would definitely leave them. In fact, in 2008 without any competition from FinTech banks already caused a recession. There's a much larger probability that with competition they try to be safer so they don't lose customers.

A2 FinTech Developing Nations

1.

Myers '17

https://www.forbes.com/sites/chrismyers/2017/02/07/3-reasons-why-fintech-is-failing/#4621909b7229

I spend most of my days at BodeTree working with banks and other incumbent financial institutions. **While every institution has its own set of values and goals, most have one thing in common: they hate change. Incumbents in the finance sector are incredibly powerful and complacent. Most don't fear fintech companies looking to take their business because, frankly, not a single one poses a real threat at this time. Banking, and Financial Services in general is highly regulated and therefore inherently conservative. It's the one industry I can think of where a commitment to innovation and decisive action is detrimental to a career. The common wisdom amongst bankers is that keeping one's head down and maintaining the status quo is the path to long-term success. This means that fintech companies that choose to pursue measured, sustainable growth by working with these incumbents are in for a long sales cycle.** For BodeTree, that means that a typical deal can take 12 - 18 months to come to fruition. Now, my team and I have worked hard to reduce this cycle, but even now the fastest we've ever seen a bank move is six months from introduction to contract. **This lengthy sales cycle makes it difficult to raise capital and gain visible traction.**

Schroeder '18

https://www.reuters.com/article/us-usa-fintech-fed/fintech-firms-want-to-shake-up-banking-and-that-worries-the-fed-idUSKCN1P80C0

The U.S. Federal Reserve is wary of giving "fintech" firms such as OnDeck Capital Inc (ONDK.N) or Kabbage Inc. access to the country's financial infrastructure, putting the central bank at odds with other regulators looking to bring them into the fold. However, fintech firms say they are reluctant to invest heavily in nationwide expansion without access to the payment systems, settlement services, and other Fed tools and the central bank has yet to decide whether to let those lightly-regulated players in. Many Fed officials fear these firms lack robust risk-management controls and consumer protections that banks have in place. "They probably do want access to the payments system, but they don't want the regulation that would come with that access," St. Louis Fed President James Bullard told Reuters in November. "I am concerned that fintech will be the source of the next crisis," he added. Companies such as PayPal (PYPL.O) and LendingClub Corp(LC.N) have attracted millions of customers by offering greater convenience or better prices than traditional banks. The OCC and the FDIC say such firms can broaden access to financial services because their low-cost models allow them to reach poorly served areas and offer small loans that are uneconomical for bigger banks. But some **fintech firms say they would be reluctant to invest the time and resources in applying for and maintaining the new OCC fintech license unless the Fed gives them access to the payments system, so they will not have to depend on banks to route money for them. Direct access would eliminate bank routing fees, a top-five operating cost for**

many fintech firms, and would allow them to compete more effectively with traditional lenders. "It's hard to know if it's worthwhile applying if you don't know what access you'd have to the Fed services," said Jason Oxman, CEO of the Electronic Transactions Association, which represents fintechs and banks. "It would be helpful for the Fed to clarify." Banks are pushing back, arguing fintech firms should access the Fed system only if they comply with the same rules banks face."You don't want a new charter that skirts existing rules and regulations and call that innovation," said Paul Merski, executive vice president for the Independent Community Bankers of America. Unveiled in July, the OCC special charter allows fintechs to operate nationwide under a single license, provided they satisfy some liquidity, capital and contingency planning requirements. **Currently, state regulators that oversee fintechs focus primarily on consumer protections, such as capping interest rates on lending products, privacy safeguards, and preventing unfair or deceptive practices. Some states may also require firms to comply with anti-money laundering rules, submit business plans or allow onsite examinations. By comparison, nearly every aspect of banks' operations is subject to rigorous scrutiny and multiple federal and state laws. These include a host of capital and liquidity requirements, operational risk, cyber risk, vendor risk, anti-money laundering and bank secrecy rules, fair lending and anti-discrimination lending laws. The OCC fintech charter does not permit companies to collect federally insured deposits, now a precondition for accessing the Fed's payment system.**

Sipa '18

https://geekforce.io/blog/why-is-fintech-so-popular-these-days/

Banks are not famous for their transparency, nor for being customer-friendly. On the other hand, most fintech apps offer simple, transparent solutions, that beat the outmoded apps of traditional banks hands down. Providing solutions that break off with outdated bank practices is a specialization of fintech startups. Concentrated on clients, fintech solutions allow to use its services in a simple manner. We can do all this with one device. Back in the days, we would have to leave home and visit a given company's branch; today, we do it without leaving home, using a dedicated app. Fintech is not just innovative in the technological sphere. Subsequent startups are creating products on the market like never before, using financial models that no one has ever come up with. That is why there are situations, in which entrepreneurs enforce a change in past legal regulations that are now obsolete and unsuited to the present reality.

TrueNorth '18

https://www.truenorth.co/updates/how-will-the-future-economic-climate-impact-the-fintech-industry/

Currently, FinTech is dominated more by smaller companies and the larger banks are learning to partner or perish. The technology offered by startups is still very widely distributed. Companies are focusing on fine-tuning one solution to offer, rather than a one-stop shop. **In the future, look for larger institutions to search for more enterprise solutions and for FinTech to become more centralized as a larger part of big banking. This will be fueled by the demands of an economy where wealth gaps are widening and much of the population needs alternative solutions to financing and convenient banking on its schedule to fit the working class lifestyle. Also, as FinTech starts to face more strict regulation, banks absorbing companies that need assistance with compliance will be more common.**

Financial Stability Board '19

https://www.fsb.org/wp-content/uploads/P140219.pdf

To date, the relationship between incumbent financial institutions and FinTech firms appears to be largely complementary and cooperative in nature. FinTech firms have generally not had sufficient access to the low-cost funding or the customer base necessary to pose a serious competitive threat to established financial institutions in mature financial market segments. Partnering allows FinTech firms to viably operate while still being relatively small and, depending on the jurisdiction and the business model, unburdened by some financial regulation while still benefitting from access to incumbents' client base. At the same time, incumbents benefit from access to innovative technologies that provide a competitive edge.

A2 Small Businesses

1. **Alt-Cause.** Big Tech has not caused the decrease in small businesses. Stapp '19 of George Mason University finds that the general decline in tech startups predates the existence of big tech and is better explained by three other factors.
    a. A declining labor force has led to the decline in startups because there are not enough skilled people available to hire.
    b. Wage increases in big companies have compelled people to join a company rather than start one.
    c. As technological innovation has continued it has become much harder, costly, and riskier to innovate so the population is opting to join larger firms rather than trying to innovate.
2. **Alt-Cause**. Murray '18 of the Competitive Enterprise Institute explains that two other factors have lead to the decrease in startups.
    a. Overly stringent regulation on banks has decreased lending for startups and made startups unable to find funding.
    b. Regulations on initial public offering, where firms began to sell stock to investors, have made it harder for startups to sell stock and thus harder to fund themselves.
3. Turn. Bercovici '18 of Incorporated explains that every single small business or startup is dependent on the tech giants because Amazon, Facebook, and Google all give businesses access to vast markets, efficient ads, and cheap and reliable infrastructure. Indeed, Allen '19 of Incorporated writes that because breaking up the tech giants means depleting their revenues, the platforms and tools that small businesses use will now stop being free and cost more, hurting millions of small businesses.

W-M&A

1. Defense. Petit '18 of ESB writes that mergers and acquisitions are actually a form of competition between the tech giants because they acquire smaller firms to use and scale up their innovation and to hire those firms innovative employees. Large firms are only buying small firms to innovate and hire more people.
2. Turn. McArle '19 of the Washington Post explains that preventing large firms from buying up smaller firms would actually decrease financing for startups because venture capitalists only fund startups that can get bought out so they will gain a return on their investment. Indeed, Berner '04 of the University of Chicago finds that severely decreasing mergers and acquisitions decreases the entry rate of new firms by 10 to 20 percent. Moreover, Phillips '10 of Dartmouth University finalizes that a 10 percent increase in the probability of being bought by a larger company increases a firm's innovative research and development by 35 percent.

W-Patent Abuse

1. Defense. They are painting a false picture of big tech. Decker '18 of Bloomberg explains that the tech giants have created an organization for startups to join called the "LOT Network" that grants startups the ability to use any patent owned by the tech giants. Tech giants are the key to ending patent abuse, not the other way around.
2. Defense. Key '17 of Forbes writes that even if startups don't have access to patents, most patents are written too narrowly for patent litigation to actually be brought against a company. Most startups can just develop similar technology without violating the actual patent.

*W-VC Stop Investing

1. Alt-Cause. Rinehart '18 of the American Action Forum explains that the reason initial venture capital funding has declined is because startups need less money to begin operating due to the decline in computing costs because of new cloud web-based services. Venture capitalists aren't abandoning startups; startups just need less funding.

I - Innovation

1. Non-Uq./Turn. Molla '17 of Vox of explains that the tech giants invest the most money into research and development out of all US companies. Unfortunately, this investment that drives innovation will end if you split up tech giants for two reasons.
    a. Cross-App. Antitrust enforcement will scare tech monopolies from innovating to outcompete their competitors because it will make them dominate the market and susceptible to antitrust.
    b. Cross-App. Rinehart '18 of the American Action Forum writes that splitting up the tech giants would ruin the immense amount of capital they commit to funding. By splitting up the technology stacks, project teams, and funding of the tech giants, the large companies would no longer be carry out such intensive innovation.

Thus, Knott '16 of Washington University finds that large firms conduct 5 times the research and development of small firms, and they have 13 percent more productivity with that research and development.

Knott '16

https://www2.census.gov/ces/wp/2016/CES-WP-16-20.pdf

Beyond reconciling the first puzzle of irrational large firms, and providing preliminary insight into the second puzzle of why small firms conduct R&D, our results offer a broader implication: that large firms are the chief engine of innovation (and accordingly economic growth). Thus Schumpeter (1942) was correct. Not only do large firms (using the US Small Business Association definition of greater than 500 employees) conduct 5.75 more R&D in aggregate than small firms, they have 13% higher productivity with that R&D. However this merely captures the private returns to their R&D. A further benefit of large firm R&D is that it generates the spillovers upon which small firm innovation free-rides.

Molla '17

Molla, Rani. "Tech Companies Spend More on R&D than Any Other Companies in the U.S." *Vox*, Vox, 1 Sept. 2017, www.vox.com/2017/9/1/16236506/tech-amazon-apple-gdp-spending-productivity. Accessed 16 June 2019.

Tech companies lead top U.S. companies in R&D spending. That's notable because spending on research and development is a key indicator for U.S. productivity, a measure of how well our economy is doing, and productivity has been decreasing lately. **No one is really sure why, especially given all the advances in technology. But spending on R&D is another factor in measuring productivity, and tech companies are certainly contributing in that area. Led by Amazon, Alphabet, Intel, Microsoft and Apple, tech companies spent more on research and development than any other companies in the S&P 500 that reported such data, according to FactSet data from the most recent fiscal year.**

Key '17 - small businesses can work around patents that giants own

https://www.forbes.com/sites/stephenkey/2017/11/13/in-todays-market-do-patents-even-matter/#2d6e06cf56f3

> You may be able to deter others from working around by building a 'wall' of intellectual property around your technology. But **most patents are written far too narrowly for that to be the case. With a little effort, they are easily worked around.**
>
> Patent attorneys are keen to liken patents to real estate property. That's wishful thinking. At best you can establish perceived ownership over an idea. But you never actually *own* anything. That's the conclusion I reached after watching my Silicon Valley patent attorneys spar against the toy company Lego in federal court. After three long years, we settled two weeks before trial. I learned firsthand that patents are just words subject to interpretation by judges, juries and patent examiners. **Patents that are virtually identical are issued all the time**, further confounding the situation

Decker '18

https://outline.com/rUWm8c

Bloomberg.com, Bloomberg, www.bloomberg.com/news/articles/2018-05-10/tech-giants-offer-startups-free-patents-in-bid-to-foil-lawsuits. Accessed 16 June 2019.

Red Hat Inc. and Lenovo Group Ltd. are giving away free patents to any startup that joins a group of more than 200 companies devoted to keeping its members and their patents out of court.
It's a carrot to entice startup companies to join the LOT Network, a non-profit created by Alphabet Inc.'s Google and Canon Inc. four years ago to combat litigation by patent assertion companies, known derisively as "trolls," that don't make any products but seek royalties by challenging patents. By joining LOT, a company agrees that if they sell patents to such firms, all group members will have a free license to them.

Berner '04 - increase M&As increase firm entry rate
https://www.jstor.org/stable/pdf/10.1086/422439.pdf?refreqid=excelsior%3Ad2a41770a6b0fa06f5d65dd9258414fd
Our findings are strongly consistent with the hypothesis that M&As are associated with subsequent increases in the probability of entry into the markets in which the M&As occur. The results are both statistically and economically significant. Our approximation of the effects of M&As by moving from the means of the M&A variables to zero or from the 75th to the 25th percentiles reduces the proportion of the markets with entry by about 10–20% of all entry, which is economically significant. We also run three sets of robustness checks that (1) use alternative econometric methods, (2) change the specifications of the exogenous variables, and (3) alter the data samples. These findings support our main result that M&As tend to increase the probability of subsequent de novo entry.

McArle '19
Megan McArle, March 8, 2019, Why 'break up big tech' will work better as a Warren campaign theme than as an actual policy, Washington Post, ashingtonpost.com/opinions/2019/03/08/why-break-up-big-tech-will-work-better-warren-campaign-theme-than-an-actual-policy/?utm_term=.2a27e6b16a5b
For Warren's theory to work, you have to believe that both tech firms and antitrust regulators can correctly identify which businesses are likely to pose a threat to big incumbents and force them to stay out of those businesses. But the history of antitrust does not offer much reason to think this is true. Consider the decade-long antitrust case against Microsoft, in which both the firm and regulators obsessed about who was going to control the Web browser, while Google quietly sneaked into the pole position in the race for the Next Big Thing. Too, **the venture capitalists who fund all these start-ups want to recoup their investment, if not more, and one of the main ways of doing that is by selling out to one of the FAANGs — Facebook, Apple, Amazon, Netflix or Google. So, ironically, an antitrust move to enhance competition could end up making it harder to finance start-ups in the first place.**
Meanwhile, Warren's plan would do approximately nothing to address a subject that voters do actually care about, at least a little: the fear that occupying such dominant market position gives the FAANGs too much power over our day-to-day lives. The problem is, **the companies have that power only because we want the services they provide. And since these businesses tend to be characterized by network effects — meaning that sites such as Facebook become more valuable to users as more users join them — you can't break up their core services without taking away something we really want**.
Splitting Facebook or Amazon or Google Search in two would create substantially less useful services.

But slicing off big tech's peripheral offerings won't substantially diminish the power that really bothers people.

Rinehart '18 - startups need less VC

"Is There a Kill Zone in Tech?" *Technology Liberation Front*, 7 Nov. 2018, techliberation.com/2018/11/07/is-there-a-kill-zone-in-tech/. Accessed 15 June 2019.

First off, the nature of the venture capital market has changed due to the declining costs of computing. Not too long ago, much of a tech company's Series A and B would be dedicated to buying server racks and computing power. But with the advent of Amazon Web Services (AWS) and other cloud computing technologies, this need has dried up. What does this mean for the ecosystem? Ben Thompson explained the impact back in 2015: I**n fact, angels have nearly completely replaced venture capital at the seed stage, which means they are the first to form critical relationships with founders. True, this has led to an explosion in new companies far beyond the levels seen previously, which is entirely expected — lower barriers to entry to any market means more total entries — but this has actually made it even more difficult for venture capitalists to invest in seed rounds: most aren't capable of writing massive numbers of seed checks; the amounts are just too small to justify the effort.** Instead, venture capitalists have gone up-market: firms may claim they invest in Series' A and B, but those come well after one or possibly two rounds of seed investment; in other words, today's Series A is yesteryear's Series C. This, by the way, is the key to understanding the so-called "Series A crunch": it used to be that Series C was the make-or-break funding round, and in fact it still is — it just has a different name now. Moreover, the fact more companies can get started doesn't mean that more companies will succeed; venture capitalists just have more companies to choose from. Research is only now catching up with Thompson's hunch. In a newly released NBER working paper, **economists David Byrne, Carol Corrado, Daniel E. Sichel find that prices for computing, database, and storage services offered by AWS dropped dramatically from 2009 to 2016. As they concluded, "cloud service providers are undertaking large amounts of own-account investment in IT equipment and that some of this investment may not be captured in GDP."**

Stapp '19 - decline in small businesses is better explained by other factors

"Elizabeth Warren Wants to Turn the Internet into a Literal Sewer (Service)." *Truth on the Market*, 10 Mar. 2019, truthonthemarket.com/2019/03/09/warren-wants-to-turn-facebook-into-a-literal-sewer-service/. //TP

The exact causes of the decline in business dynamism are still uncertain, but recent research points to a much more mundane explanation: demographics. Labor force growth has been declining, which has led to an increase in average firm age, nudging fewer workers to start their own businesses. Furthermore, it's not at all clear whether this is actually a decline in business dynamism, or merely a change in business model. We would expect to see the same pattern, for example, if would-be startup founders were designing their software for acquisition and further development within larger, better-funded enterprises. Will Rinehart recently looked at the literature to determine whether there is indeed a "kill zone" for startups around Big Tech incumbents. One paper finds that "an increase in fixed costs explains most of the decline in the aggregate entrepreneurship rate." Another shows an inverse

correlation across 50 countries between GDP and entrepreneurship rates. **Robert Lucas predicted these trends back in 1978, pointing out that productivity increases would lead to wage increases, pushing marginal entrepreneurs out of startups and into big companies. Arguably, it is also simply getting harder to innovate.** As economists Nick Bloom, Chad Jones, John Van Reenen and Michael Webb argue, **just to sustain constant growth in GDP per person, the U.S. must double the amount of research effort searching for new ideas every 13 years to offset the increased difficulty of finding new ideas. If this assessment is correct, it may well be that coming up with productive and profitable innovations is simply becoming more expensive, and thus, at the margin, each dollar of venture capital can fund less of it. Ironically, this also implies that larger firms, which can better afford the additional resources required to sustain exponential growth, are a crucial part of the *solution*, not the problem.**

Phillips '12 - 10 percent increase probability of being acquired increases R&D expenditures by ~40%

http://faculty.tuck.dartmouth.edu/images/uploads/faculty/gordon-phillips/rd_acquisitions.pdf

Table 6 presents the results using the excluded mutual fund flow instrument, Mfflow. The regressions include all control variables that we use in the previous linear probability target model in Table 5. The results for all specifications show that firms invest more in R&D when the predicted probability of being acquired is higher. Results in Table 6 show that takeover probability has an economically significant effect on firms' R&D. **Thus, a 10-percentage-point increase in the probability of being taken over results in 35.3 to 38.9 percentage points (0.353 in column 1, to 0.389 in column 2) more R&D expenditures per dollar of sales.**

Petit '18 - tech giants use M&A for innovation assets to remain competitive

https://esb.nu/esb/20047701/american-tech-giants-are-fiercely-competitive-monopolies

A third dimension of competition is for cooperation in entrepreneurial assets. This competition can be seen on the demand side of the labor market and on the supply of side of capital markets. Take labor markets. SEC filings data show that job growth in FAANG has approximated job growth in the high-tech sector over the past few years. The US Bureau of Labor Statistics also recently reported that high tech workers are paid well above those not engaged in high tech. This percolates through all employee ranks. Not only are engineers paid more, but sales reps, managers and administrative staff earn wage premiums of between 8 and 48 percent. Last, but not least, data shows that employees at Amazon and Google have among the lowest job tenures of Fortune 500 companies, indicating the job churn that characterizes a vibrant, competitive industry. **Or consider capital markets. The moligopolists M&A activity on transactional markets can be seen as a declination of moligopoly competition for entrepreneurs, through waves of 'acqui-hiring'. Additionally, the moligopolists engage in corporate venture capital (CVC). Well-known examples include Google ventures of $258 million and Microsoft venture of $1 billion investments in Uber, Microsoft's $240 million investment in Facebook in 2007, Google-led $524 million investment in MagicLeap. The bottom line is: some moligopolists look like**

Schumpeterian social institutions which incentivize, finance and structure the efforts of entrepreneurs through which competitive disruption occurs.

Murray '18 - decreased lending and restrictions on IPOs are hurting start ups, VCs can't fill the gap
https://cei.org/blog/how-encourage-tech-competition-deregulate-finance

The reason is that changes in start-up formation and growth are simply the predictable result of overly stringent financial regulation. Figures show that start-up capital is very hard to find—58% of start-up respondents to a Federal Reserve survey in 2015 say they were unable to meet their funding needs. A New York Fed report in 2016 showed that 67% of small firms received none or only some of the funding they applied for. Banks have decreased lending to start-ups by 15% since 2008. The biggest banks have decreased funding the most, lending only $45 billion to small businesses in 2015—down from $73 billion in 2006. These restrictions in funding availability are almost certainly due to financial regulations imposed after the financial crisis. Banks are shying away from risk, and funding a start-up is certainly a risk. While venture capitalists (VCs) have filled some of the funding gap, their lending patterns exhibit geographical and sectoral biases—low-tech entrepreneurs in Wichita have less opportunity than their counterparts in Silicon Valley. Very few venture capital firms invest in firms in "flyover country"—only 10-15% of VC funding goes to firms in this region. Some VC firms have a "twenty-minute rule," stating that if a startup needing capital is more than a 20-minute drive from the offices of the VC firm, it will not receive funding. About half of the companies in the U.S. funded by venture capital are located in the same three cities with the highest number of venture capital firms: San Francisco, Boston, and New York.

Venture capital also has sectoral biases. The high technology/software sector has become the favored sector for venture capital funding over the past few years, with two to three times more tech startups getting VC funding now than just a few years ago. Biotech has also grown, representing 54% of VC-backed IPOs over the past three years. Low tech entrepreneurs, particularly in the middle of the country, are therefore unlikely to find VC funding. For those businesses that do make it through to moderate success, the traditional route to the next stage has also been made more difficult. **Ever since the passage of the Sarbanes-Oxley law in 2002, Initial Public Offerings (IPOs) have become extremely onerous undertakings. This has meant that selling equity to public investors in an open market has become extremely difficult. Instead, equity is restricted to founders and private investors. In turn, this restricts investment opportunities for the public. Selling out to Tech Titans therefore becomes an important part of the profit motive and the exit strategy for the founders and early investors. Cutting off that exit strategy will likely reduce the number of ventures that are started.** Financial technology ("FinTech") has shown some capacity to solve these problems, but regulators have not been open to it. The financial technology of equity crowdfunding has not been embraced by the Securities and Exchange Commission, despite the passage of the JOBS Act in 2012. Moreover, the promised revolution of peer-to-peer business lending never really materialized, as regulators set their sights on these lenders and

forced them to act like more traditional lenders, undermining the business model. **The result is that financial regulation aimed at stopping "too big to fail" actually created a problem of "too small to succeed." Larger firms may have become entrenched because regulation makes it too difficult to lend to startups and skews the incentives when it comes to a successful startup growing or selling out to a larger firm. Dominant corporations that have become so since 2008 may therefore be a product of regulation as much as their own entrepreneurial success.** More regulation to break them up will simply exacerbate the dysfunction. Moreover, the geographic and sectoral biases of venture capitalists have been exposed by the regulation-induced retreat of regional banks from small business lending. **This results in less economic opportunity available in the American heartland, compounding other well-documented factors such as the decline in manufacturing employment and lack of infrastructure. Finally, the lack of businesses going public results in a shortage of investment opportunities, reinforcing the strength of dominant companies on the stock market.** While it would be a mistake to call this a vicious cycle, the feedback effect is important. A Deregulation Agenda: If the current antitrust problem is indeed an artifact of regulatory policy, it makes no sense to try to solve the problem by applying more regulation to large firms. Instead, the solution should be deregulatory—removing the regulation-induced barriers to startups and business growth. At the heart of the problem is the banking regulations introduced in two waves (Sarbanes-Oxley and Dodd-Frank) since the turn of the millennium. **Two forms of regulation need to be examined and targeted for reform: Regulations that impose costs on banks that would otherwise lend to small businesses. These may be direct regulations that discourage risk-taking or indirect regulations that encourage a bank to hire a compliance officer rather than a loan officer. Regulations that restrict the opportunity for a firm to go public. These may be regulations that increase the cost burden of going public, such as requiring expensive audits, or regulations that disincentivize entrepreneurs from taking the personal risk of becoming the head of a public company.**

Jason Allen, Writer & Business Coach, June 5, 2019, https://www.inc.com/jason-aten/the-federal-government-looks-ready-to-pick-a-fight-with-big-tech-heres-why-there-wont-be-any-winners-if-they-do.html, The Federal Government Looks Ready to Pick a Fight With Big Tech. Here's Why There Won't Be Any Winners if They Do
Millions of you run small businesses that depend on the platforms created by these companies. Whether it's selling on Amazon, making apps that are sold to iPhone users, or advertising on Facebook and Google, there are collateral implications to breaking apart these companies. Facebook isn't a valuable advertising venue without access to your customers and the tools to effectively reach them. **The services you use from Google-- like business email, file storage, and analytics tools-- aren't going to be free when they're broken into five different companies that lack the scale and reach of the world's largest advertising platform.**

Bercovici '18

Bercovici, Jeff. "Apple, Amazon, and Google Want to Help Small Businesses Succeed--But Not Too Much." *Inc.com*, Inc., 23 Apr. 2018, www.inc.com/magazine/201805/jeff-bercovici/big-tech-monopoly-startup-competition.html. Accessed 16 June 2019.

The platform players want to see companies take wing, because they impose a tax on everything those companies do. Apple, the world's most profitable company, takes 30 percent of every sale in the App Store; merchants pay Amazon $40 per month or more to sell there--and don't forget those Facebook and Google ads and AWS fees. The tech giants plow those profits into ever more new businesses, where they compete with their own customers.

A2 Automation/AI Bad

1. Defense. Shafto '16 of Rutgers University writes that big tech companies are making their artificial intelligence open source, meaning that the code and data behind their artificial intelligence programs are published so anyone can use them to develop and speed up the advancement of AI without the tech monopolies existing.
2. Defense. Snyder '19 of Stanford writes that automation does not eliminate jobs. This is because while you can automate repetitive tasks, certain aspects of jobs cannot be. For example, in automation and farming, the two most automated industries, workers have not been displaced. In fact, of the 250 types of jobs listed by the Census Bureau, only one has been phased out from automation. Synder continues that in the status quo, jobs that are at risk of automation are already being phased out. Currently, baby boomers and older workers do the majority of manufacturing and younger generations are not picking up the slack. This means that as the amount of jobs in the service sector grows, and automation jobs shrink, there are less workers to be displaced. This also means that production costs go down, so more people can be employed in sectors with higher wages.
3. Defense. Vincent '17 of The Verge explains that even if the jobs are lost due to automation, these workers are retrained and future generations gain higher education

and social mobility. This happens historically, as when technology displaced farming jobs in the early 1900's, the US government increased spending on education, and the amount of workers the age displaced attending highschool went up nearly 70%.

4. Impact Turn. The Washington Post explains that in the next four years, more than 75 million jobs may be lost as companies shift to more automation, but 133 million new jobs will emerge during that period, as businesses develop a new division of labor between people and machines.

Snyder, Bill, Stanford Business, Our Misplaced Fear of Job-Stealing Robots, https://www.gsb.stanford.edu/insights/misplaced-fear-job-stealing-robots

Why hasn't automation had a more significant effect on the economy to date? The answer isn't simple, but there's one key factor: Jobs are made up of a myriad of tasks, many of which are not easily automated. "**Automation doesn't generally eliminate jobs. Automation generally eliminates dull, tedious, and repetitive tasks. If you remove all the tasks, you remove the job. But that's rare**," Varian says. Consider the job of a gardener. Gardeners have to mow and water a lawn, prune rose bushes, rake leaves, eradicate pests, and perform a variety of other chores. Mowing and watering are easy tasks to automate, but other chores would cost too much to automate or would be beyond the capabilities of machines — so gardeners are still in demand. **Automation doesn't generally eliminate jobs. Automation generally eliminates dull, tedious, and repetitive tasks. If you remove all the tasks, you remove the job. But that's rare. Some jobs, including within the service industry, seem ripe for automation; however, a hotel in Nagasaki, Japan, was the subject of amused news reports when it was forced to "fire" its incompetent robot receptionists and room attendants. Jobs, unlike repetitive tasks, tend not to disappear. In 1950, the U.S. Census Bureau listed 250 separate jobs.** Since then, the only one to be completely eliminated is that of elevator operator, Varian says. But some of the tasks carried out by elevator operators, such as greeting visitors and guiding them to the right office, have been distributed to receptionists and security guards. Even the auto industry, which accounts for roughly half of all robots used by industry, has found that automation has its limits. "Excessive automation at Tesla was a mistake. To be precise, my mistake. Humans are underrated," Elon Musk, the founder and chief executive of Tesla Motors, said last year. The Pace of Change Technology has always changed rapidly, and that's certainly the case today. However, there's often a lag between the time a new machine or process is invented and when it reverberates in the workplace. "The workplace isn't evolving as fast as we thought it would," Paul Oyer, a Stanford GSB professor of economics and senior fellow at the Stanford Institute for Economic Policy Research, said during a panel discussion at the forum. "I thought the gig economy would take over, but it hasn't. And I thought that by now people would find their ideal mates and jobs online, but that was wrong too." Consider the leap from steam power to electric power. When electricity first became available, some factories replaced single large steam engines on the factory floor with a single electric motor. That didn't make a significant change to the nature of factory work, says Erik Brynjolfsson, director of the MIT Initiative on the Digital Economy. But when machinery throughout the factory was electrified, work changed radically. The Rise of the Service Sector **Employment in some sectors in which employees tend to have less education is still strong, particularly the service sector. As well-paid professionals settle in cities, they create a demand for services and new types of jobs. Autor calls these occupations "wealth work jobs," which include employment for everything from baristas to horse exercisers. The 10 most common occupations in the U.S. include such jobs as retail salespersons, office clerks, nurses, waiters, and other service-focused work. Notably, traditional occupations, such as factory and other blue-collar work, no longer make the list.**

Snyder, Bill, Stanford Business, Our Misplaced Fear of Job-Stealing Robots, 2019, https://www.gsb.stanford.edu/insights/misplaced-fear-job-stealing-robots

Employment in some sectors in which employees tend to have less education is still strong, particularly the service sector. As well-paid professionals settle in cities, they create a demand for services and new types of jobs. Autor calls these occupations "wealth work jobs," which include employment for everything from baristas to horse exercisers. The 10 most common occupations in the U.S. include such jobs as retail salespersons, office clerks, nurses, waiters, and other service-focused work. Notably, traditional occupations, such as factory and other blue-collar work, no longer make the list. Looming over all of the changes to the labor force is the stark fact that birth rates in the U.S. are at an all-time low, says Varian. **As has been widely reported, the aging of the baby-boom generation creates demand for service jobs but leaves fewer workers actively contributing labor to the economy.**Even so, the U.S. workforce is in much better shape than other industrialized countries. The so-called dependency ratio — the proportion of people over 65 compared with every 100 people of working age — will be much higher in Japan, Spain, South Korea, Germany, and Italy by 2050. And not coincidentally, says Varian, countries with high dependency ratios are looking the hardest at automating jobs. **As the country ages, society will have to find new, more efficient ways to train and expand the workforce** — immigration will be a key — **and work to better accommodate the growing number of women in the workforce, many of whom are still held back by family and household responsibilities**. The robots may not be taking over just yet, but advances in artificial intelligence and machine learning will eventually become more of a challenge to the workforce. Still, it's heartening to be reminded that, for now, "humans are underrated."

Vincent, James, The Verge, Automation threatens 800 million jobs, but technology could still save us, says report, 2017, https://www.theverge.com/2017/11/30/16719092/automation-robots-jobs-global-800-million-forecast

It's not all doom and gloom, though, as McKinsey states that the worst effects of this transition can be mitigated if governments take an active role. Michael Chui, the lead author of the report, compared the level of action needed to the Marshall Plan — an American initiative that pumped some $140 billion into Western Europe after WWII, helping countries rebuild and industrialize. **The report uses America's transition out of agriculture as a historical example, pointing out that the decrease in farming jobs in the US was accompanied by major spending on secondary education and new laws enforcing compulsory attendance. In 1910, only 18 percent of children aged 14 to 17 went to high school; by 1940 this figure was 73 percent.** The resulting increase in educated workers helped create a booming manufacturing industry and buoyant middle-class. A similar push is needed today, says McKinsey, yet over the last few decades, spending on labor force training and support has fallen. The conclusion of the report seems to be: automation doesn't have to be a disaster, but only if politics keeps pace.

*A2 Labor Monopsony

1. Defense. McClaren '18 of the University of Edinburgh writes that by the next year the tech industry will face a worker shortage over 1.1 million skilled workers, meaning that the tech giants will have to compete over workers resulting in higher wages and less abusive contracts. In fact, because of the already tightening labor market, Gillespie '18 of CNN writes that wage growth is the highest its been since 2009.
2. Defense. Bruenig 18' of Jacobin explains that on average large companies pay 111% more than small businesses because they have more capital to spend on their workers. Moreover, The ITIF in 2017 found that tech sector wage growth was 17 percent higher than the overall US wage growth. Indeed, Auerback '19 of IMI writes that tech giants are already raising their minimum wage to 15 dollars, but in contrast small firms have comparably low wages because they invest all of their funds in research and development.
3. Defense. Petit '18 of ESB explains that currently because of firm entries and the competitiveness in the tech labor market the tech sector has very high job churning, meaning that people are switching jobs within the tech sector at a high rate because they are being offered higher wages. That's why he finds that tech workers, at all employee ranks, have higher wages than the average US wage.

A2 Contracts

1. Defense. Sheng 18 of CNBC writes that workers with jobs in higher wages are more likely to have their services contracted out than jobs associated with lower wages because workers have the ability to negotiate contracts.
2. Alt-cause. Katz '16 of Harvard University gives five alternate causes as to why employee contracting is on the rise:
    a. Technological advancements in employee monitoring and the standardization of job tasks has made it more cost effective for companies to contract workers rather than employ them.
    b. An increase in demand for flexible work hours caused more workers to become contract workers.
    c. The Great Recession caused many workers to seek contract employment when traditional employment was not available.
    d. A decreased cost for healthcare diminished the demand for traditional employment because those benefits were no longer as essential.
    e. Contracting work is more prevalent amongst older workers and higher skilled workers because their work is more eligible to be contracted out, regardless of tech giants.
3. Turn. Swanner '17 of Insights writes that most contract workers are only contracted out because tech firms do not have the funding to commit to hire them full time and tech firms want to see if they have the skills to be hired full time. This means that ending tech contracting will only prevent people from getting any pay and getting hired full time.

A2 Collusion

1. Defense. In the status quo, collusion is being solved back for. This is for two reasons
    a. First. The LA Times '15 explains that after a 415 million dollar settlement and a DOJ investigation, companies have begun to compete over workers once again.
    b. Second. Neidig of The Hill '19 writes that media outlets and policy makers from both aisles have sided with a nationwide trend to scrutinize actions of tech monopolies.

    For these two reasons, the LA Times continue that competition over labor is incredibly fierce within the tech industry, as companies offer large bonuses to try and poach workers from other giants.

A2 Non-Competes

1. Defense. Even if a worker does sign non-competes, there is still initial competition for that worker which means they are still receiving high entry wages.
2. Defense. Spire '19 writes that 4 states, including California, have already banned non-competes and that in most states non-competes aren't very enforceable because the court only enforces them if it protects the trade secrets of the employers.
3. Hsu '18 of The Antitrust Bulletin confirms this as he finds that higher returns to capital allow monopolies to reinvest money to create more, and better jobs. He furthers that technology produced by tech giants could make workers more productive, leading to wage increases.

Commented [1]: http://myweb.fsu.edu/shsu/publications/63AntitustBull104.pdf.

Commented [2]: I can cut these in a bit

Hsu ‘18

http://myweb.fsu.edu/shsu/publications/63AntitustBull104.pdf

The second step in this analysis is also uncertain: **Does an increase in the capital-labor ratio lead to income or wealth inequality?** A first-order economic analysis would certainly suggest so: **Fewer jobs would push wages down, and more capital would certainly suggest higher returns to capital. But as with many other economic matters that seem obvious, it’s complicated.38 Higher returns to capital might be reinvested so as to create more, and possibly better jobs. Technology could also make workers more productive, restoring an equilibrium temporarily disturbed by some spurt in technology.**39 Or, even if the Autor studies ultimately prove to be the last or nearly-last word, there is the response, “So what?” Isn’t the competitive behavior of super-firms what the goal of antitrust law was supposed to be?40 Perhaps. But if one accepts that inequality is a social ordering problem in need of redress, then some discussion of the normative underpinnings of antitrust law would seem to be called for, even overdue. If even just a prima facie case exists that higher capital-labor ratios are a fundamental shift and not a temporary phenomenon, then at the very least some further research and discussion is needed to examine the role of antitrust law in helping to bring about a potentially structural change to the economy. A richer economic analysis would inform antitrust lawmakers, who now need to take into account a much broader range of economic considerations, and not just consumers surplus

LA Times ‘15

https://www.latimes.com/business/technology/la-fi-tn-tech-jobs-settlement-20150903-story.html

A federal judge has approved a $415 million settlement that ends a lengthy legal saga revolving around allegations that Apple, Google and several other Silicon Valley companies illegally conspired to prevent their workers from getting better job offers.

The case focused on a "no-poaching" pact prohibiting Apple, Google and other major employers from recruiting each other's workers. Lawyers for the employees argued the secret agreement **illegally suppressed the wages of the affected workers.**

Things have changed dramatically since the class-action lawsuit was filed in 2011. Silicon Valley employers now regularly raid each other's workforces in search of talented engineers who might help them come up with new ideas and build technology's next hot product.

The lawsuit covered a period extending from 2005 to 2009. More than 64,000 technology workers will receive about $5,800 apiece to settle allegations that their wages were illegally held down by their employers' collusion during that time.

The competition is so fierce now that Silicon Valley employers dangle huge incentives to lure top programmers away from other companies. For instance, Tesla Motors CEO Elon Musk earlier this year said that Apple was offering $250,000 signing bonuses and 60 percent raises to persuade some of his employees to leave the electric car maker. Tesla has been aggressively raiding Apple's ranks, too, although Musk hasn't revealed how much his company has been offering.

Neidig ‘19 https://www.latimes.com/business/technology/la-fi-tn-tech-jobs-settlement-20150903-story.html

The struggling **news industry is joining calls to increase oversight of tech giants like Facebook and Google**, urging policymakers to also take into account how Silicon Valley has upended the business of journalism.

The House Judiciary Committee's antitrust investigation into tech giants will hold a hearing on Tuesday to hear from industry leaders and advocates who believe that Silicon Valley is responsible for the decline in local newspapers and has threatened the business models relied on by many outlets.

Lawmakers in both parties have steadily turned against the tech giants, fueling a growing movement to scrutinize their market power and their collection of user data.

Katz ‘16

https://krueger.princeton.edu/sites/default/files/akrueger/files/katz_krueger_cws_-_march_29_20165.pdf

The first explanation is that alternative work is more common among older workers and more highly educated workers, and the workforce has become older and more educated over time. A shift-share analysis, however, indicates that shifts in the age and education distribution of the workforce account for only about 10 percent of the increase in the percentage of workers employed in alternative work arrangements from 2005 to 2015. 13 **Other supply-side factors, such as a possible increase in demand for flexible work hours (perhaps supported by the increased availability of health insurance as a result of the Affordable Care Act) may also have contributed,** although it is unlikely that supply-side factors account for the lion's share of the rise in alternative work arrangements since the rise in employees who are hired out to other firms through contract firms or temporary help agencies accounts for more than half of the overall rise in the share of employment in alternative work arrangements in the last decade. **Second, technological changes that lead to enhanced monitoring, standardize job tasks and make information on worker reputation more widely available may be leading to greater disintermediation of job tasks.** Coase's (1937) classic explanation for the boundary of firms rested on the minimization of transaction costs within firm-employee relationships. **Technological changes may be reducing the transaction costs associated with contracting out job tasks, however, and thus supporting the disintermediation of work.**

Finally, it is plausible that the dislocation caused by the Great Recession in 2007-2009 may have caused many workers to seek alternative work arrangements when traditional employment was not available. Although we cannot assess how much of the rise in alternative work arrangements occurred in the aftermath of the Great Recession, if this is the case then one might expect a return to a lower percentage of workers employed in alternative work arrangements over time, as the effects of the recession continue to fade.

Swanner '17

SwannerOctober, Nate. "Do Contract Workers Hurt Full-Time Tech Hiring?" *Dice Insights*, 10 Oct. 2017, insights.dice.com/2017/10/05/contract-workers-hurt-tech-hiring/. Accessed 16 June 2019.

Employee-placement service Adecco once posited in a blog posting that hiring budgets are the root cause of companies' embrace of contract workers. Many jobs also don't have enough of a workload to justify a full-time employee; for example, if a company's mobile app only needs an occasional tweak or bug-squash, a manager may hire a developer to check the code out on a periodic basis, as opposed to onboarding someone to sit at a desk full-time.

As Adecco's posting also pointed out, **companies may leverage contractors in a temp-to-hire situation: "They want to make sure that a candidate has the necessary skills and is a good culture fit before employing them directly… Employee turnover is expensive – and if a contractor is terminated, the staffing agency is responsible for the unemployment costs."**

Spire '19

Jacoutot, Michael. "6 Things You Need To Know About Non-Compete Agreements." *Spire Workforce Solutions*, Spire Workforce Solutions, 13 Feb. 2019, spireworkforcesolutions.com/blog/non-compete-agreements. Accessed 16 June 2019.

California, Montana, North Dakota, and Oklahoma completely ban non-compete agreements except in limited circumstances. Hawaii bars high-tech companies from requiring their employees to enter non-compete agreements as a condition of employment. Illinois enforces them on a case-by-case basis. Canadian courts will enforce certain non-competes. You get the point. Different areas mean different rules**. Following recent outcry about Jimmy John's use of non-competes on its sandwich makers, many states are looking to rein in their laws around non-competes. As a general rule of thumb, courts only enforce non-competes to the extent necessary to protect the employer**… but, in no way does that mean individuals can rely on courts to rule in their favor. **Non-competes are legally binding so long as the clause contains reasonable limitations as to the geographical area and the time period in which an employee of a company cannot compete.**

Petit '18

https://esb.nu/esb/20047701/american-tech-giants-are-fiercely-competitive-monopolies

Take labor markets. SEC filings data show that job growth in FAANG has approximated job growth in the high-tech sector over the past few years. **The US Bureau of Labor Statistics also recently reported that high tech workers are paid well above those not engaged in high tech. This percolates through all employee**

ranks. Not only are engineers paid more, but sales reps, managers and administrative staff earn wage premiums of between 8 and 48 percent. **Last, but not least, data shows that employees at Amazon and Google have among the lowest job tenures of Fortune 500 companies, indicating the job churn that characterizes a vibrant, competitive industry.**

Auerback '19

"Warren's Antitrust Proposal: Should We Break Up Big Tech, or Just Regulate It Better?" *Naked Capitalism*, 12 Apr. 2019, www.nakedcapitalism.com/2019/04/warrens-antitrust-proposal-should-we-break-up-big-tech-or-just-regulate-it-better.html. Accessed 16 June 2019.

Many businesses that are relatively small, and have minimal levels of concentration, are also marked by "low productivity levels, productivity growth rates hovering around zero, and low real wages," according to an INET-supported studyby Professors Lance Taylor and Özlem Ömer. As a result, small businesses are often the first to protest increased regulation or "burdensome" mandates, such as those for additional health care provision or increased unionization. And that hardly makes them ideal candidates for the kinds of things Warren is aiming to achieve with her proposals.

By contrast, one of Warren's chief targets, Google, has just mandated "that all its temporary and contractor workers based in the United States receive a $15 minimum wage by 2020 and comprehensive healthcare, including eight sick days and 12 weeks of paid parental leave, by 2022," according to a recent piece by Jillian D'Onfro for Forbes.com. This echoes a recent move by Amazonto raise minimum wages to $15 per hour.

ITIF - wage growth in tech sector is 20% compared to 3% of the rest of the economy

https://itif.org/publications/2017/11/28/new-report-shows-rd-intensive-tech-startups-grew-47-percent-last-decade

Wage growth among tech-based startups was higher than overall U.S. wage growth from 2007 to 2016 (20 percent versus 3 percent).

McClaren ‘18
The U.S. economy added 200, 000 jobs in January. “America Gets a Raise: Wage Growth Fastest since 2009.” *CNNMoney*, Cable News Network, money.cnn.com/2018/02/02/news/economy/january-jobs-report-2018/index.html. Accessed 16 June 2019.

The digital skills gap is already hampering digital transformation at 54% of companies. And that gap is widening: Korn Ferry’s research predicts that by 2020, the technology, media, and telecommunications (TMT) industries may be short more than 1.1 million skilled workers globally. Fast forward to 2030, and that deficit may reach 4.3 million, or 59 times Alphabet’s entire workforce. And since companies across all industries already struggle to find great digital talent, that’s a big problem for everyone.

Gillespie ‘18
The U.S. economy added 200, 000 jobs in January. “America Gets a Raise: Wage Growth Fastest since 2009.” *CNNMoney*, Cable News Network, money.cnn.com/2018/02/02/news/economy/january-jobs-report-2018/index.html. Accessed 16 June 2019.
The U.S. economy added 200,000 jobs in January, and wages grew at the fastest pace in eight years. The unemployment rate stayed at 4.1%, the lowest since 2000, the Labor Department said Friday. Wages were up 2.9% compared with a year earlier, the best pace since June 2009. Wage growth has been the last major measure to make meaningful progress since the end of the Great Recession. The Federal Reserve would like wages to grow even faster -- 3% or more -- but Friday's report was a welcome sign for workers after years of stagnant pay. Economists say it's time to take note of how strong, or "tight," the U.S. job market is. Friday's numbers show 2018 "will be a year of rising wages and the tightest labor market in over a generation," said Joseph Brusuelas, chief U.S. economist at RSM, an accounting and consulting firm.

Sheng 18’
https://www.cnbc.com/2018/10/22/silicon-valley-using-contract-employees-to-drive-profits.html, Silicon Valley’s dirty secret: Using a shadow workforce of contract employees to drive profits.

It’s not just administrative or “blue-collar-type” jobs that are being affected. Whereas 10 years ago, most contractors were in administrative-type roles, today the fastest growth in contract work is in highly skilled “white collar” roles, recruiters say. **Economists Lawrence Katz and Alan Krueger in a 2016 studyfound that workers with jobs in higher wages are more likely to have their services contracted out than jobs associated with lower wages. Such “alternative” work arrangements are becoming more common among older and more educated workers.**

A2 Data mining/privacy

1. Defense. Matsakis '19 of Wired finds that because anti-trust regulations are meant to competition problems, they aren't well formulated to address data mining and privacy issues. He concludes that well coordinated action among privacy, consumer protection, and antitrust policies is required for effective privacy protection

Commented [3]: https://www.wired.com/story/break-up-big-tech-antitrust-laws/

Commented [4]: Command + F "Another issue is that antitrust laws are intended to address competition problems"

A2 Politics

W- Funding

W- Ads/Online Manipulation

^ Pre-fiat arg - once resolution is passed they no longer

A2 Taxes

- Time-frame Weighing - Even if there is backlash in the short term, they lose all funding in the LT and have no control over the media anymore

A2 Rural Internet Access

1. Defense/Turn. Tech giants and internet service providers are different. In fact, Kang '13 of the Washington Post explains that the tech giants want to push for the expansion of the internet across America, but telecommunication giants, which are not tech giants, do not want the expansion of the internet. Moreover, splitting up the tech giants will not help them expand the internet. Reardon '18 of CNET explains that building internet in rural areas is very cost prohibitive because they have large geographical barriers and the population density is so low it is hard to make a profit, which means only monopolies which have large sources of revenue could fun such an expensive venture. Indeed, William '18 of SBT finds that Microsoft is currently investing 10 billion dollars into bringing the internet to rural areas.
2. Defense/Turn. Starr '13 of Wired explains that the biggest barrier to internet access is local governments, who charge exorbitant rates for right-of-way to use the internet infrastructure. This has two implications:
    a. First, small companies will never be able to lower the cost to access internet because they cannot endure the cost of getting the rights for the infrastructure.
    b. Second, since even large companies like Google are somewhat deterred by the high cost, breaking up these tech companies eradicates any chance of these areas having internet because the only companies that could afford to supply internet in these areas would no longer exist.

W - Competition lowers prices

1. Cross app: Evans from our case finds in order to protect their market dominance, tech giants are forced to avoid damaging behavior like dramatically raising prices because consumers will switch to a new entrant company.

W - Infrastructure needs to be built

1. Anderson '18 of the Pew Research Center finds that only 24% of rural adults have problems getting access to high speed internet.
    - NUQ: Rogers '18 finds that there are numerous federal grant programs that provide funding for improving internet access in rural areas => internet infrastructure will develop internally (locally).
    - This scenario is more probable than the idea of companies competing with each other to make the internet more accessible because Rogers continues that due to geographical barriers, it's not financially viable for big ISPs to expand into these communities (rural, not densely populated, and geographical barriers)

Starr '13 Wired

https://www.wired.com/2013/07/we-need-to-stop-focusing-on-just-cable-companies-and-blame-local-government-for-dismal-broadband-competition/

So the real bottleneck isn't incumbent providers of broadband, but incumbent providers of rights-of-way. These incumbents – the real monopolists – also have the final say on whether an ISP can build a network. They determine what hoops an ISP must jump through to get approval.

It also helped that these local governments had less leverage because the states of Kansas, Missouri, and Texas had streamlined video franchising laws so a provider need only get one license for the entire state. **"[I]t's clear that investment flows into areas that are less affected by regulation than areas that are dominated by it,"** observed Milo Medin, Google's Vice President of Access Services, in summarizing the lessons of Google's Kansas City experience in Congressional testimony.

When even well-established companies like Google are deterred by such barriers to entry, is it really surprising that there aren't more competitors jumping into the broadband market? As Medin pointed out, "just imagine the impact on small and medium-sized enterprises."

Anderson, Monica, Pew Research Center, About a quarter of rural Americans say access to high-speed internet is a major problem, September 2018, https://www.pewresearch.org/fact-tank/2018/09/10/about-a-quarter-of-rural-americans-say-access-to-high-speed-internet-is-a-major-problem/

Fast, reliable internet service has become essential for everything from getting news to finding a job. But **24% of rural adults say access to high-speed internet is a major problem in their local community**, according to a Pew Research Center survey conducted earlier this year. An additional 34% of rural residents see this as a minor problem, meaning that roughly six-in-ten rural Americans (58%) believe access to high speed internet is a problem in their area. By contrast, **smaller shares of Americans who live in urban areas (13%) or the suburbs (9%) view access to high-speed internet service as a major problem in their area**. And a majority of both urban and suburban residents report that this is not an issue in their local community, according to the survey, conducted Feb. 26-March 11. (The survey categorized Americans as urban, suburban or rural based on their own description of their community type.) Concerns about access to high-speed internet are shared by rural residents from various economic backgrounds. For example, 20% of rural adults whose household income is less than $30,000 a year say access to high speed internet is a major problem, but so do 23% of rural residents living in households earning $75,000 or more annually. These sentiments are also similar between rural adults who have a bachelor's or advanced degree and those with lower levels of educational attainment. There are, however, some differences by age and by race and ethnicity. Rural adults ages 50 to 64 are more likely than those in other groups to see access to high-speed internet as a problem where they live. Nonwhites who live in a rural area are more likely than their white counterparts to say this is a major problem (31% vs. 21%). (Racial and ethnic differences are also present across a number of other perceived problems for communities, ranging from traffic to crime.) For years, policymakers and advocates have looked to address broadband-related gaps between rural and non-rural communities in subscriptions, infrastructure, performance and competition. Data from the Federal Communications Commission show that rural areas are less likely to be wired for broadband services and tend to have slower internet speeds compared with other areas of the country. There are also fewer broadband providers operating in rural areas, which means consumers tend to have limited options when subscribing to high-speed services. And while the broadband gap between rural and non-rural Americans has narrowed over time, rural adults remain less likely to have a high-speed internet connection at home. Seven-in-ten suburban residents and two-thirds of urban dwellers say they subscribe to broadband services at home, compared with 58% of rural adults, according to a separate Pew Research Center survey conducted in January. Beyond lower home broadband adoption rates, adults in rural areas also are less likely to own mobile devices or to use the internet. While around two-thirds of rural Americans have a smartphone, those shares rise to around eight-in-ten among those living in cities (83%) or the suburbs (78%), according to Center data. At the same time, some rural Americans do not use the internet in any capacity: 22% of adults living in a rural area say they never go online, a share that is more than double that among urban or suburban residents.

Rogers, Kaleigh, VICE, Rural America Is Building Its Own Internet Because No One Else Will, https://www.vice.com/en_us/article/paax9n/rural-america-is-building-its-own-internet-because-no-one-else-will

Dane Shryock walked over to a map hanging on the wall of the county commissioners' office in downtown Coshocton. He ran his finger along a highway to point out directions to a family farm, where he told me I'd find an antenna placed atop a tall blue silo. "You're going to want to go straight down 36, turn left on this county road," Shryock, one of three county commissioners in Coshocton, Ohio, said. "There's a cemetery on the left, and then you'll see a big red barn." I snapped a photo of the map. The old-school directions were necessary because the address doesn't exactly show up on Google Maps and, besides, my phone lost all signal after about the third hill on that county road. It was a blistering hot July day in Appalachian Ohio and I was on a mission to see firsthand how rural communities have stopped waiting for Big Telecom to bring high-speed internet to them and have started to build it themselves. About 19 million Americansstill don't have access to broadband internet, which the Federal Communication Commission definesas offering a minimum of 25 megabits per second download speeds and 3mbps upload speeds. Those who do have broadband access often find it's too expensive, unreliable, or has prohibitive data capsthat make it unusable for modern needs. **In many cases, it's not financially viable for big internet service providers like Comcast and CharterSpectrum to expand into these communities: They're rural, not densely populated, and running fiber optic cable into rocky Appalachian soil isn't cheap. Even with federal grants designed to make these expansions more affordable, there are hundreds of communities across the US that are essentially internet deserts.** But in true heartland, bootstrap fashion, these towns, hollows—small rural communities located in the valleys between Appalachia hills—and stretches of farmland have banded together to bring internet to their doors. They cobble together innovative and creative solutions to get around the financial, technological, and topological barriers to widespread internet. And it's working, including on that farm down the county road in Coshocton. It's just one example of a story that's unfolding across America's countryside. Here, a look at three rural counties, in three different states, demonstrates how country folk are leading their communities into the digital age the best way they know how: ingenuity, tenacity, and good old-fashioned hard work. THE 'SILICON HOLLOW' Letcher County, Kentucky Letcher County is in the heart of coal country. The 300-square-mile, 25,000-person corner of Kentucky is tucked just across the border from Virginia. It's rippled with endless rolling hills, dense forest, little towns, and boarded-up mines. Like many similar communities, the county has been hard hitby the waning coal industry. But while politicians, including President Donald Trump, rally around the promise to "bring coal back," the residents in many of these communities would rather look to the future. And in their mind, that future depends on high-speed internet. "We view it as the next economic revolution for coal towns," said Harry Collins, the chairman of the Letcher County Broadband Board, which formed late last year. "The majority of our railroad tracks are ripped up now—that revolution has played out. We feel that this [digital] revolution is just as game changing and life changing as those railroad tracks were in the 20s and 30s." I met Collins, and his vice chair Roland Brown, at a rural broadband summit in Appalachian Ohio, where the two men chatted strategy and ideas with other rural community leaders who were further along in the process. Their region of Kentucky has the highest unemployment rate in the state, at 10.2 percent, according to the Kentucky Center for Education and Workforce Statistics. That's more than double the national average. The population also has poor health indicators, a low education attainment, and may not be able to work outside the home because they're caring for small children or aging relatives. Brown told me high-speed internet could help alleviate all of these pressures. "If I've got reliable broadband, we can do telemedicine and bring in doctors from other areas," Brown said. "If I can get people at home going to school online, I can raise up my education attainment level, which is only going to help me attracting employers in the long run. There are so many economic and social benefits of this." Other parts of Kentucky have already set a high standard for rural internet. Jackson County, in the middle of the state, is home to just over 13,000 residents spread across 350 square miles. It's also home to gigabit internet available via fiber opticcable to every home in the county. Eager to keep pace, Letcher established a voluntary broadband board, which had its first meeting in February this year. They began by surveying the entire region to pinpoint the areas with the least amount of access and quickly identified a stretch in the southwest corner of the county that was completely unserved. Ten businesses and 489 households covering 55 miles of mountain terrain had no access to high-speed internet whatsoever. The board decided to focus on this area first, which they've dubbed "Phase One." But it will be no easy task to connect this rural, rocky stretch of Appalachia. There are hills, hollows, and a lot of distance from the nearest hooked-up hub. **The county has applied for a $1.3 million grant from the Department of Agriculture under its Community Connect program, and will find out in September whether that's been approved. The County Fiscal Court has also committed $200,000 to theproject, bringing the total to $1.5 million. The plan, if the funding comes through, is to beam out a broadband signal from Whitesburg—the county seat ten miles away—to the Phase One area, then send fiber out to individual homes and businesses**. But it will be a patchwork, with some fiber ending at the edge of a long hollow, and feeding into another tower that will transmit the signal to the folks living at the other end. "We're never going to be able to level the mountains off to get us connected to the rest of the world, but I can lay a piece of fiber that goes around that mountain." **The board has established a "dig once" initiative, where any time roadwork or repairs are being done in**

the area, county workers are obliged to lay fiber at the same time. It's also looking into innovative techniques for connecting along the highway, such as micro trenching, where the fiber optic cable is embedded a few inches into the road and blacktopped over. "It cuts down your chances of animals taking your line down, or car wrecks that take it down, or storms that take it down," Brown said. The goal, over time, is to connect as much of the county as possible with a municipally-run broadband service that's delivered like a utility—the same as electricity or water—and is self-sustaining, even if it's not profitable. It's all part of a larger effort in the state, led by Congressman Hal Rogers, who envisions tech as filling much of the gap left by the coal industry, and has proposed the dream of a "Silicon hollow."As Letcher County prepares to lay its first miles of fiber, that dream is keeping these volunteers motivated. "Broadband is the digital railroad but instead of extractive, we're looking to it to bring jobs in, bring education in," Collins said. "We're never going to be able to level the mountains off to get us connected to the rest of the world, but I can lay a piece of fiber that goes around that mountain and then I can connect to the rest of the world." INTERNET ON THE TV Garrett County, Maryland Cheryl DeBerry likes to joke about her home county's location in Maryland. "We have Pennsylvania to the north, West Virginia to the east, west, and south," DeBerry told me. "I'm not really sure where we're connected to Maryland." Garrett County is located at the most western reach of Maryland's panhandle. It sits just below the Mason-Dixon line, smack dab in the Appalachian Mountains. It's rural, mountainous, and forested—pretty much the opposite of Cape Cod. This geography was part of the reason why fewer than 60 percent of residents in Garrett County had broadband internet as of 2011, when county commissioners asked the economic development office, where DeBerry works, to identify its No. 1 priority for improving the region's economy. DeBerry and her colleague quickly zeroed in on rural access to high-speed internet. With a goal of 90 percent broadband coverage across the county, low population density, and plenty of hills and trees in the way, it wasn't a simple proposal. To start, the county applied for a grant from the Appalachian Regional Commission—a federal-state partnership that supports economic development in Appalachia. With that money and some county funds, the local government hired a consultant to come up with a plan to reach its new goal: partner with a private company, and use any resources on hand to weave a network together. One of those resources was unused TV channels. Known as white space, a lot of the frequencies that previously broadcast analog channels are no longer used, since stations have switched to digital, which requires less spectrum space. All these unused "channels" can act like Wi-Fi extenders, bringing internet to further reaches. Basically, if you could get the local TV news back in analog days, you can get the internet to your door now. In Garrett County, this was a huge asset, according to Nathaniel Watkins, the chief information officer for the county government. Due to the county's geography, there were multiple unused channels available that weren't being broadcast on and that weren't getting any bleed over from other cities. "We're kind of protected on all sides by mountains," Watkins said. "In rural areas, we're super fortunate because there aren't a lot of TV broadcasters that are bleeding over into those channels." White space is particularly useful because it's transmitted on low-frequency waves, meaning it doesn't need a direct line-of-sight from the transmission point to the receiver. It can reach through trees, hills, and buildings, making it ideal for rural areas. The FCC recently approved the use of channel bonding, where multiple consecutive channels are lumped together to create a larger bandwidth, something Garrett County quickly took advantage of. But while whitespace enabled a lot of the internet expansion in this corner of Maryland, it was only one tool the county has been using. When there is direct line-of-sight—if a community has a tall hill in the center where a tower can be built, for example—using a 5Ghz wireless system can provide better results. To get these hubs in as many places as possible, the county government started looking for anything tall enough to stick an antenna on. "People have allowed us to put antennae on barns, silos, the sides of houses," DeBerry told me. "There are antennae on trees. We've got folks willing to put in poles [on their property] for us. They're just desperate for service and willing to help their neighbors get it as well." Often, a combination of techniques is used: fiber connection from the county seat can feed to a tower, which transmits several miles via whitespace to a smaller tower on someone's barn, which shoots 5G signal down to all the neighbors. For $75 a month (comparable or less than a satellite internet subscription), residents can get 5 mbps download and upload speeds with no data caps and much more reliable services. DeBerry said while the county government has a private partner working on these projects, it's not trying to compete with the local ISPs that have been serving the area. They've worked with these businesses to extend their service as well, tasking county summer workers with digging trenches so the companies can expand another mile to reach an unserved area. "We just recently completed a project for that, and a cable company is now able to provide service for 25 new homes and businesses because we helped them get the infrastructure there," DeBerry said. In the last year, more than 150 new homes and businesses gained access to high-speed internet through the program. There are still plenty of people without access, and with the exception of those who don't want internet (like the local Mennonite and Amish communities), DeBerry said she believes they can one day get everyone hooked up. "I'm hopeful we can reach most of those people even out in the middle of nowhere," she said. "We're trying to get everybody." AHEAD OF THE CURVE Coshocton County, Ohio "Enjoy your visit to Coshocton," said a high schooler after I snapped some photos of the flag team practice. She wasn't quite sure why a reporter would come to this sleepy corner of Ohio, with its winding country roads, corn fields, and population of 11,000. But when I told her I was reporting on rural broadband, a look of understanding washed over her face. After all, for the last seven years, a high-speed internet transmitter has topped the student radio station tower on the hill across from River View High School, beaming lightning fast internet into the school and surrounding homes. It's the product of a long-term project spearheaded by a local politician. In 2006, Gary Fischer was the mayor of Warsaw, Ohio (population 800), and decided to run for a commissioner seat. It was the first time he had realized the area's digital divide. "We had great internet service in Warsaw, so I didn't realize it was an issue until I started campaigning county wide," Fischer told me. It quickly became apparent that many people in the county's rural stretches lacked any internet access—more than 4,000 households were unconnected. The only option they had was satellite service, which was slow (1 to 2 mbps), spotty (bad weather, or even a breeze, could knock out a signal), and expensive ($75 to $80 per month in 2006, according to Fischer). He wasn't sure how, but he told voters he would work on fixing the problem if he got elected. Fischer took office on January 1, 2007. That spring, a member of the county's IT department returned from a conference bearing a napkin scribbled with ideas. It was Fischer's first glimpse at a solution; A private-public partnership could help set up infrastructure to expand broadband and deliver wireless signals to pockets across the county. But the private company, Lightspeed Technologies (now owned by Watch Communications), didn't want to foot the bill for putting up dozens of towers. It needed "vertical infrastructure," Fischer said. So he went hunting for the tallest things in the county. First the county identified huge state-owned radio towers that transmitted Ohio's Multi-Agency Radio Communication System (MARCS), which is used by emergency services. Coshocton asked the state if

it could lease some space at the top of these towers to put up broadband antennae. While the state mulled it over, the county looked for more towers: the local 911 radio towers, the water towers, the radio station at the high school. "Then we started to broaden our horizons a little bit," Fischer told me. "We're in a farming community. We've got 100 foot silos all over the country. That's as good as a 100 foot tower." Eventually, the state gave the greenlight to lease the MARCS towers, and Coshocton secured a $38,000 grant from the Appalachian Regional Commission. It used that money to offset the costs of leasing the towers while the local provider set up shop. Over the next six years, 16 towers were raised—on top of barns, on MARCS towers, on water towers—to deliver high-speed internet to the county's most rural residents. Each tower took some creative engineering. The village of Walhonding, for example, is located in a hollow that blocked the signal from the closest MARCS tower in Newcastle, just three miles away. County surveyors went in, identified an ideal location, and knocked on the door of a Walhonding resident. "They said, 'We'll give you free internet service if you let us put a tower in your backyard,'" Fischer said. "He was happy to do it. Now we have 20 or 30 households in Walhonding that are connected." Though the county government still works as a middleman—it leases the local 911 towers to the ISP, and subleases the state towers—it has spent very little beyond that first $38,000 grant (Fischer said the county invested about $10,000 in lawyers fees to draw up all the contracts). **The user fees keep the system entirely self-sustaining, and profitable for the private ISP. Between 2008 and 2011, the percent of Coshocton County residents with broadband internet at home rose from 32 percent to 58 percent, according to Connect Ohio, and they were paying less than the state average**. The latest map shows a significant coverage area, though there are still pockets of unserved communities. Fischer said he knew from day one that the county wouldn't be able to reach all 4,000 households in the short term. These days, Fischer plans to start a campaign to inform small communities of how to lure the local service provider. If just seven households can all agree they want internet and one of the homeowners puts a tower in their yard, or on top of their silo, it would make it worthwhile for the ISP to bring in service. He said the proof of concept has reached the point where it's a lot easier to expand than in the initial parts of the project. "A lot of people said this would never work, but we've been up and running since April of 2009," Fischer said. "It's here. It's proven." Back on that hot day in June, I managed to find the cemetery and the barn outside of Coshocton, just as Shryock had instructed. No one was home when I knocked and, as horses eyed me from a nearby paddock, stared up at the antenna on top of that big blue silo. I know now that it beams high-speed internet to the farmhouse next door—for free, since the family graciously provided the silo—and to dozens of neighbors up and down the hollow, including another farmer down the road, who waved at me from his tractor as I drove past on my way back to Brooklyn.

Kang '13

https://www.washingtonpost.com/business/technology/tech-telecom-giants-take-sides-as-fcc-proposes-large-public-wifi-networks/2013/02/03/eb27d3e0-698b-11e2-ada3-d86a4806d5ee_story.html?noredirect=on&utm_term=.aa695df45821

The federal government wants to create super WiFi networks across the nation, so powerful and broad in reach that consumers could use them to make calls or surf the Internet without paying a cellphone bill every month. The proposal from the Federal Communications Commission has rattled the $178 billion wireless industry, which has launched a fierce lobbying effort to persuade policymakers to reconsider the idea, analysts say. **That has been countered by an equally intense campaign from Google, Microsoft and other tech giants who say a free-for-all WiFi service would spark an explosion of innovations and devices that would benefit most Americans, especially the poor. Some Republican lawmakers have criticized Genachowski for his idea of creating free WiFi networks, noting that an auction of the airwaves would raise billions for the U.S. Treasury. That**

sentiment echoes arguments made by companies such as AT&T, T-Mobile, Verizon Wireless, Intel and Qualcomm, in a letter to the FCC staff late last month, that the government should focus its attention on selling the airwaves to businesses. Some of these companies also cautioned that a free WiFi service could interfere with existing cellular networks and television broadcasts. Intel, whose chips are used in many of the devices that operate on cellular networks, fears that the new WiFi service would crowd the airwaves. The company said it would rather the FCC use the airwaves from television stations to bolster high-speed cellular networks, known as 4G. "We think that that spectrum would be most useful to the larger society and to broadband deployment if it were licensed," said Peter Pitsch, the executive director of communications for Intel. "As unlicensed, there would be a disincentive to invest in expensive networking equipment and provide users with optimal quality of service." Cisco and other telecommunications equipment firms told the FCC that it needs to test the airwaves more for potential interference. "Cisco strongly urges the commission to firmly retreat from the notion that it can predict, or should predict . . . how the unlicensed guard bands might be used," the networking giant wrote. Supporters of the free-WiFi plan say telecom equipment firms have long enjoyed lucrative relationships with cellular carriers and may not want to disrupt that model. An FCC official added that there is little proof so far that the spectrum that could be used for public WiFi systems would knock out broadcast and 4G wireless signals. "We want our policy to be more end-user-centric and not carrier-centric. That's where there is a difference in opinion" with carriers and their partners, said a senior FCC official who spoke on the condition of anonymity because the proposal is still being considered by the five-member panel. **The lobbying from the cellular industry motivated longtime rivals Google and Microsoft to join forces to support the FCC's proposal.** Both companies would benefit from a boom in new devices that could access the free WiFi networks.

Reardon '18

https://www.cnet.com/news/why-rural-areas-cant-catch-a-break-on-speedy-broadband/

Building networks in rural America is incredibly expensive, and in some places it's nearly impossible. The terrain can be a problem in areas like West Virginia, nestled among the Appalachian, Allegheny and Cumberland mountain ranges. In Alaska or Minnesota, the ground could be frozen for more than half the year, making it nearly impossible to install fiber or other infrastructure. But the biggest barrier to getting broadband in certain areas of the country is low population density. Broadband providers simply won't offer service if they can't get enough customers to pay for it. In sparsely populated areas like Cass County, Iowa, where my CNET colleague Shara Tibken was born and raised, residents may see internet speeds of 5 megabits per second, a far cry from the 25 Mbps speeds the FCC defines as broadband.

A2 Neg

A2 Green Tech

1. **Non-uq.** Without big tech big oil will still drive the advancement of green energy. Chatsko '18 of the Motley Fool finds that big oil firms are investing in green tech in an effort to dominate clean energy supply chains. In fact, Milkulka '18 of Cornell University finds that oil and gas is becoming unprofitable, causing big oil to lose huge sums of money and to switch to green energy. Thus, Vaughan '19 of the Guardian finds that clean energy is going to become our primary power source in 2040.

Silverstein '19

https://www.forbes.com/sites/kensilverstein/2019/04/07/big-oil-is-feeling-the-heat-and-dipping-into-green-energy/#11e2e5b162e7

Roughly $6.5 trillion is invested using such environmental, social and corporate governance criteria in the United States, according to US SIF. The amount is about $26 trillion, globally. That's according to Climate Action 100+, which says that companies focused on the triple bottom line — economics, environment and social — are outperforming other broader indices and they are also demonstrating that they are living their missions and ingraining their brands among their customers. What effect is this having on the major oil companies? Oil and gas will remain their pillars because those endeavors generate greater returns than do those in the green energy sphere. But those conglomerates are experimenting with clean tech investments as a way to generate safer returns as well as a way to stave off their critics who emphasize that they have spent far more funding front groups that deny manmade climate change than on investing in sustainable energy. "**The renewable energy market is highly competitive and fragmented, returns on investments are typically lower than in oil and gas, and the average investment is much smaller in size," says consulting firm Wood McKenzie. "The Majors may want to look towards mergers and acquisitions, developing offshore wind, or solar PV in emerging markets, in order to find a competitive edge and be able to deploy sufficient capital to grow in the sector." Good news is lurking: Since 2016, 148 deals have been made in alternative energy and carbon capture, CDP says. Since 2010, $22 billion has been invested alternative energies. And, 15 of 24 oil and gas companies it surveyed now have climate targets, with Repsol, Shell and Total having the most ambitious ones.**

"The shift to a low-carbon economy presents the question of what role oil and gas companies will play in this transition, and what their strategic options are in the more immediate and longer term," Luke Fletcher, senior analyst at CDP said. "Equinor's recent rebrand to a broad energy company, expecting to invest 15%-20% of (its capital expenditures) in new energy solutions by 2030, is symbolic of this shift." Big Oil has come under intensive scrutiny from investors, climate activists and state attorneys general, forcing it to become more transparent about how it values its climate risks while also doing more to curb its CO_2 releases. That dynamic is part of what is behind this move to diversify their portfolios and to accept their role in human-caused climate change. But their strategies are also premised on the fact that they are major natural gas developers, which is seen as a cleaner alternative to coal for electricity generation.

Chatsko '18
https://www.fool.com/investing/2018/06/04/big-oil-is-investing-billions-in-renewable-energy.aspx

If the future of energy were a storybook, then renewable energy would play the part of the hero. That would leave oil and gas producers as the villains – and it's not difficult to see why. The transportation, electricity generation, and industrial sectors account for 78% of America's total carbon emissions. A couple of famous oil spills don't really help from the PR perspective, either. That has led many public and private institutions to expel any holdings in the oil and gas industry from their endowments, but that might not be a wise strategy in the long run. Displacing and replacing fossil fuels won't be easy. Nor cheap. That leads to an inconvenient reality for most narratives surrounding clean energy: moving to a renewable future as quickly as possible will require help from the incredible capital generation capabilities of the world's largest oil companies. The numbers are impossible to ignore. Consider that ExxonMobil (NYSE:XOM), Royal Dutch Shell (NYSE:RDS-A) (NYSE:RDS-B), Chevron (NYSE:CVX), BP(NYSE:BP), and Total SA (NYSE:TOT) have generated a combined $44.6 billion in free cash flow in the last 12 months. That's a whole lot of solar panels. Or research and development. Or equity investments in promising start-ups. **Far from being a villain, big oil is perhaps one of the most important allies for renewable energy. The world's oil supermajors generate significant levels of cash flow, boast infrastructure networks that span the globe, and have the most to lose from falling behind the technology curve. It's still early in the oil and gas industry's transition, but the largest energy companies are leaving no stone unturned in their quest for dominating clean energy supply chains. To date, big oil investments in renewable energy have spanned practical slow-and-steady approaches (solar panels) to big, bold bets (next-generation energy storage or genetically**

engineered algae). However, not all companies have a coherent strategy in place just yet. For instance, whereas ExxonMobil wants to develop next-generation renewable fuels that can be dropped into its existing refining and distribution network, Chevron has yet to pick a defined path in clean energy. That's something investors should keep in mind. **Then again, these massive oil companies are just getting started. In other words, like it or not, the road to a renewable energy future is probably paved with the profits of oil and gas operations.**

Mikulka '18

https://www.nakedcapitalism.com/2018/12/fracking-2018-another-year-pretending-make-money.html

2018 was the year the oil and gas industry promised that its darling, the shale fracking revolution, would stop focusing on endless production and instead turn a profit for its investors. But as the year winds to a close, it's clear that hasn't happened. Instead, the fracking industry has helped set new records for U.S. oil production while continuing to lose huge amounts of money — and that was before the recent crash in oil prices. But plenty of people in the industry and media make it sound like a much different, and more profitable, story. However, Reuters recently analyzed 32 fracking companies and declared that "U.S. shale firms are more profitable than ever after a strong third quarter." How is this possible? Reading a bit further reveals what Reuters considers "profits." "The group's cash flow deficit has narrowed to $945 million as U.S.benchmark crude hit $70 a barrel and production soared," reported Reuters. **So, "more profitable than ever" means that those 32 companies are running a deficit of nearly $1 billion.** That does not meet the accepted definition of profit. A separate analysis released earlier this month by the Institute for Energy Economics and Financial Analysis and The Sightline Institute also reviewed 32 companies in the fracking industry and reached the same conclusion: "The 32 mid-size U.S.exploration companies included in this review reported nearly $1 billion in negative cash flows through September. The numbers don't lie. Despite the highest oil prices in years and record amounts of oil production, the fracking industry continued to spend more than it made in 2018. And somehow, smaller industry losses can still be interpreted as being "more profitable than ever."

Johnston, Ian. "Global fossil fuel demand set to fall from 2020, three centuries after the dawn of the Industrial Revolution." The Independent. Feb. 2017.
https://www.independent.co.uk/environment/coal-oil-demand-renewable-energy-solar-panels-electric-vehicles-investors-a7557756.html //RJ
Technological improvements and the risks posed by climate change were building momentum with rising levels of investment, research and public support in and for renewables. **And that, the report said, "could result in a global explosion of low-carbon technology deployment in the coming decades". The cost of solar panels has fallen by 85 per cent in seven years with battery costs dropping by 73 per cent over a similar period, while demand for electric vehicles has been growing by about 60 per cent**

each year. Solar electricity was on track to become "materially cheaper than alternative power options globally", the report said.

Vaughan '19

https://www.theguardian.com/business/2019/feb/14/renewable-energy-world-power-source-bp

Renewable energy sources will be the world's main source of power within two decades and are establishing a foothold in the global energy system faster than any fuel in history, according to BP. The UK-based oil company said wind, solar and other renewables will account for about 30% of the world's electricity supplies by 2040, up from 25% in BP's 2040 estimates last year, and about 10% today. In regions such as Europe, the figure will be as high as 50% by 2040. The speed of growth was without parallel, the company said in its annual energy outlook. While oil took almost 45 years to go from 1% of global energy to 10%, and gas took more than 50 years, renewables are expected to do so within 25 years in the report's central scenario. In the event of a faster switch to a low carbon economy, that period comes down to just 15 years, which BP said would be "literally off the charts" relative to historical shifts. But the company, as in previous editions of its report, does not see oil going away any time soon. The outlook's core scenario envisages that oil demand does not peak until the 2030s, though under its greener scenario that milestone could be reached between now and the early 2020s. Regardless, BP sees a "major role" for hydrocarbons until 2040, which it says will require substantial investment. It expects global demand for oil and gas to be 80-130 million barrels per day by then, up from around 100mb/d today. The company has ambitious plans to grow its oil and gas production 16% by 2025, according to figures compiled by the Norway-based consultants Rystad Energy.

A2 Automation/AI Good

1. Defense/Turn. Middleton '18 of the IOB explains that the total invested globally in AI during 2018 alone amount to over $100 billion. That is more than double the expected annual return from AI even by 2023, problematically, he furthers that there is no way that many investors will see any payback over the forecast period- causing the AI bubble to burst.
2. Turn. Avent '17 of The Economist writes that automation drives down the value of workers, thus reducing real wages of workers. Paradoxically, this reduces the incentive for companies to shift to automation because labor is so cheap, instead trapping workers in jobs with minimal pay.
3. Harris '18 of the Harvard Business Review writes that because automation displaces workers, it reduces total consumption as these people lose real incomes and redistributes this money towards the rich. This prompts a slow-down in the economy that delinks from any economic growth.
4. Defense. Shafto '16 of Rutgers University writes that big tech companies are making their artificial intelligence open source, meaning that the code and data behind their artificial intelligence programs are published so anyone can use them to develop and speed up the advancement of AI without the tech monopolies existing.

5. Turn. Frey '13 of Oxford University explains that 47% of jobs in the US economy face being automated with the rise of automation. Furthermore, he continues that a large share of US job growth in recent years is highly susceptible to automation.
6. Turn. Ford '19 of the New York Times finds that with the spread of the internet, comes the spread of automation into the developing world which will take away low-skill labor intensive jobs that constitute the majority of employment in developing nations. Thus, Oberhaus '17 of The Outline finds that 2/3rds of jobs in the developing world are vulnerable to being taken over by automation.
7. Defense. Beyman '18 of DDI finds that right now automation replaces low cognitive work. This may sound non threatening, but it means that automation will take away all low skill jobs, manual or not. Beyman continues that automation will continue to become smarter. The implication is that even if automation creates higher skill jobs, it will eventually take over those jobs as well. Moreover, even if new jobs are created, it's unsustainable in a capitalist market to only have high skilled labor.

Middleton '18

https://internetofbusiness.com/ai-bubble-set-to-burst-says-critical-analyst-report/
"Unrealistic expectations that cannot be met and excessive investments that cannot possibly be paid back" is the stark message about artificial intelligence this week from Riot Research, part of Rethink Technology Research. **The company's latest report finds that the AI market will "only" reach $39 billion globally by the end of 2023. In some sectors, AI will "flop dismally" over the forecast period, while it will thrive in others, it says. A cull of VC-backed startups in the AI marketplace is expected during 2019 and 2020, continues the report. In the aftermath, it says, there will be "a clear pattern of AI survivors in key vertical and horizontal sectors. "This is a predictable repeat of earlier infamous bubble-burstings,** such as the dotcom collapse of 2001, which lost investors billions of dollars, but from whose ashes great tech giants such as Google and Amazon

emerged." That is more than double the expected annual return from AI even by 2023, so there is no way that many investors will see any payback over the forecast period, explained Hunter. As a result, investors will begin "rolling up startups which fail to generate revenues into others which show promise during 2019". **Given that many organisations are, according to Capgemini, misapplying the technologies for short-term tactical gain rather than long-term strategic advantage, this increases the risk that they may never find the ROI they're looking for in simple terms. That's where the market correction will kick in.**

Avent, Ryan. “The Productivity Paradox.” Medium. Mar. 2017.
https://medium.com/@ryanavent_93844/the-productivity-paradox-aaf05e5e4aad

We all sort of know this: that **whether and how companies decide to develop and use technologies depends on the costs they face.** But we often forget it when it comes to debates about robots and automation. **Today, labour costs are relatively low.** In real terms, **wage growth has been close to imperceptible for most of the workforce since 2000,** and in some cases going back much earlier. The real value of the minimum wage in America is quite low relative to what it was a half century ago. Now: it is also true that the cost of computing power and data storage has fallen, a lot. Perhaps unsurprisingly, the "capital share" of income has fallen by more in recent decades than the "labour share". One could argue that because the cost of technology has fallen by more than the cost of labour, we ought to have seen mass automation if in fact digital technology is all it's cracked up to be. But the scarce factor isn't capital equipment. What is expensive is the intangible capital that's needed to overhaul production in ways that use cheap computing power to eliminate lots of jobs. It is complicated to figure out how to get these systems working and operating in a way that generates profits. **While labour is cheap, firms face little pressure to make those massive investments in intangible capital in order to automate key processes.** Returning to the industrial parallel, it was not the case that James Watt developed his steam engine and everyone said "great, this technology is clearly superior to everything else and we will therefore use it all across the economy". Rather, it was used in a small number of contexts in which the economics (expensive labour, cheap energy) pushed business owners to experiment. Then, over time, engineers improved the technology and firms built up a wealth of knowledge about how to use it to make a buck. Then eventually the technology was so good that it began to be adopted in places where labour costs were not all that high. **Cheap labour is reducing the incentive to push new technologies along a similar path. The digital revolution is partly responsible for low labour costs. The digital revolution has created an enormous rise in the amount of effective labour available to firms. It has created an abundance of labour.** If you're a company and your workforce is demanding higher pay or being difficult, you have many ways to get the labour you need without adding to your wage bill. You can move work abroad. **Technology enabled the growth of global supply chains, which helped bring billions of low-wage workers into the global labour force.** You can restructure your business in ways which allow fewer, more skilled workers to use technology to do tasks which previously required lots of less-skilled workers; or you can restructure your business in ways that reduce the bargaining power of your employees, or reduce your obligations to them. And, of course, you can automate. How does automation contribute to this abundance of labour? Well, there's a long-run story in which the march of progress means that technology is increasingly capable of substituting for human workers across a broad range of tasks. If firms are indifferent between using people and machines, and if machines (or code) is abundant, then the effect of progress is to create a single mass pool of "labour" (meaning people and people-like machines) that is super abundant. But **there's a more straightforward and important way in which automation adds to abundance now. When a machine displaces a person, the person doesn't immediately cease to be in the labour force.** It is not the case that in period one the economy produces x using y workers and in period two it produces x using y-1 workers and therefore productivity goes up. No, that displaced worker probably has all sorts of bills to pay and must therefore find another job.

In some cases workers can transition easily from the job from which they've been displaced into another. But often that isn't possible. Generally speaking, the workers displaced by technology will tend to be those without much in the way of exceptional skills or training. **Such workers find themselves competing for work with many other people with modest skill levels, and with technology: adding to the abundance of labour.**

Harris, Karen. "Why the Automation Boom Could Be Followed by a Bust." Harvard Business Review. Mar. 2018. https://hbr.org/2018/03/why-the-automation-boom-could-be-followed-by-a-bust

The magnitude of the investment in automation in the coming decade is likely to be greater in scale than in previous periods because it will primarily affect the service sector, and it will spread through advanced economies as well as parts of the developing world. An $8 trillion investment boom would result in average annual US growth of about 3% and roughly 60% more economic output in 2030 than in 2015. **Typically, in an investment boom of this kind, supply growth creates the demand for more supply — a virtuous cycle of growth.** In the early 2020s, rapid investment in automation would likely offset a little more than half the negative impact of automation on employment, easing the demand constraint on growth and potentially mitigating the immediate displacement of millions of workers. But by the end of the 2020s, automation could eliminate 20% to 25% of current US jobs — 40 million workers — hitting middle- to low-income workers the hardest. **At the same time, many of the companies that invested heavily in automation will be saddled with assets that are out of step with demand. That's the crucial pivot between boom and bust. As the investment wave recedes, it risks leaving in its wake deeply unbalanced economies in which income is concentrated among those most likely to save and invest, not consume**. **Growth at that point would become deeply demand-constrained, exposing the full magnitude of labor market disruption temporarily hidden from view by the investment boom. Consumers who have lost their jobs to automation will spend less, putting further downward pressure on demand.** By the late 2020s, unemployment and wage pressures may exceed levels following the Great Recession in 2009. **Income inequality, having grown steadily for a decade, could approach or exceed historical peaks, choking off economic growth**. **The benefits of automation, by contrast, will flow to about 20% of workers — primarily highly compensated, highly skilled workers — as well as to the owners of capital.** The growing scarcity of highly-skilled workers may push their incomes even higher relative to less-skilled workers. As a result, automation has the potential to significantly increase income inequality.

Beyman '18- low cognitive now, will grow

https://medium.com/datadriveninvestor/no-you-sweet-summer-child-automation-will-not-create-more-jobs-than-it-destroys-heres-why-aa8d825212ee

The robotic revolution is not just more of the same. It differs in a crucially important way. **It is not human muscle power being replaced again, that already happened. What is being replaced this time is low level cognitive tasks**. Stuff like picking candies with defects out of a fast moving conveyor belt packed with 'em.

If what you're designing is a machine that needs to be able to do jobs humans did before, **the better technology gets, the more completely it will fill out that list of capabilities until one day it's basically the same thing we are.**

Designing ourselves out of the picture, little by little, scoffing at the idea that we'll ever actually succeed at it. Playing a grand game of chicken, trying to push machines as close as possible to a complete set of human capabilities without getting so close that it begins to ask uncomfortable questions like "why am I working for you instead of myself".

We do not need to reach 100% automation or even 50% before it becomes a problem we cannot ignore. Remember the **instability that occurred at 8% unemployment, during the recession that followed 9/11? Imagine that except the percentage keeps climbing, and never goes down again after that.**

Frey ‘13 - 47% of US jobs are highly susceptible to being lost to automation

https://www.oxfordmartin.ox.ac.uk/downloads/academic/future-of-employment.pdf

In this paper, we ask the question: how susceptible are current jobs to these technological developments? To assess this, we implement a novel methodology to estimate the probability of computerisation for 702 de- tailed occupations. Based on these estimates, we examine expected im- pacts of future computerisation on labour market outcomes, with the pri- mary objective of analysing the number of jobs at risk and the relationship between an occupation's probability of computerisation, wages and educa- tional attainment. We distinguish between high, medium and low risk occupations, de- pending on their probability of computerisation. We make no attempt to estimate the number of jobs that will actually be automated, and focus on potential job automatability over some unspecified number of years. According to our estimates around **47 percent of total US employment is in the high risk category**. We refer to these as jobs at risk – i.e. jobs we expect could be automated relatively soon, perhaps over the next decade or two. Our model predicts that **most workers in transportation and logistics occupations**, together with the bulk of O**ffice and administrative support workers**, **and labour in production occupations, are at risk**. These findings are consistent with recent technological developments documented in the literature. More surprisingly, we find that a substantial share of em- ployment in service occupations, **where most us job growth has occurred over the past decades** (Autor and Dorn, 2013), **are highly susceptible to computerisation.** Additional support for this finding is provided by the recent growth in the market for service robots (MGI, 2013) and the gradu- ally diminishment of the comparative advantage of human labour in tasks involving mobility and dexterity (Robotics-VO, 2013).

A2 Internet Infrastructure

General

1. Defense/Turn. Sample ‘18 of the Guardian explains that there are barriers for the internet to reach the poor, as high costs and unwilling users mean that the internet spreads only to the rich. While the poor don't gain benefits of internet access, they bear the harms. Ford ‘19 of the New York Times finds that with the spread of the internet, comes the spread of automation into the developing world which will take away low-skill labor intensive jobs that constitute the majority of employment in developing nations. Thus, Oberhaus ‘17 of The Outline finds that 2/3rds of jobs in the developing world are vulnerable to being taken over by automation.
2. Alt-cause. Mendes ‘18 of Developing Telecoms explains that companies within developing nations are increasing their share of internet development and weakening the hold US companies have on internet spread in developing nations, which is better because the revenue generated stays within the nation.
3. Non-UQ. Mendes furthers that funding is not an issue whatsoever for spreading internet to the developing world because investment is pouring in, meaning that even if the tech giants were broken up companies would still be able to get enough external funding to develop internet infrastructure.
4. Turn. Elgan ‘16 of Computerworld explains that tech giants internet lines often don't reach those missing the internet. He continues to explain that internet largely goes to those who are already online. This manifests in users switching from infinite global internet, Facebook's limited service with 38 websites.

5. Non-UQ. The UN in 2018 finds that developing nations are already about to receive universal internet access by 2020. This means that developing nations are already at a point where most of my opponents impact has already occurred and it is most likely that these developing nations and other companies can pick up the slack if monopolies are broken up.
6. Defense. Solon '17 of the Guardian writes that companies like Facebook use zero-rating to spread the internet, where they pay off ISPs in the local market to make access to their application free. Problematically, Falcon '19 of the Electronic Frontier Foundation writes that such zero-rating programs actually makes broadband internet more expensive for countries, because companies like Facebook spike prices of alternative, non-zero-rated internet in order to make the zero-rated content more attractive.
7. Defense. There is no reason that these companies after they are split up cannot just pool their resources using contracts to develop the internet infrastructure.
8. Aff Weighing/ Cross-App Uq. Even if we break up tech monopolies it is likely that these nations will achieve internet access through external causes like internally developed internet or groups of companies working together. While we may make it slower, the comparative is a developing world dominated by tech monopolies, where the impacts of inequality and low social mobility exist, effectively keeping the developing world as developing forever.

W- Economies of Scale

W- Antitrust Fear

Solon, Olivia. "'It's Digital Colonialism': How Facebook's free internet service has failed its users." The Guardian. Jul. 2017. https://www.theguardian.com/technology/2017/jul/27/facebook-free-basics-developing-markets //RJ

Free Basics, Facebook's free, limited internet service for developing markets, is neither serving local needs nor achieving its objective of bringing people online for the first time. That's according to research by citizen media and activist group Global Voices, published this week, which examined the Free Basics service in six different markets – Colombia, Ghana, Kenya, Mexico, Pakistan and Philippines – to see whether it was serving the intended audience. ***Free Basics is a Facebook-developed mobile app that gives users access to a small selection of data-light websites and services.*** The websites are stripped of photos and videos and can be browsed without paying for mobile data. ***Facebook sees this as an "on-ramp" to using the open internet: by introducing people to a taster of the internet, they will see the value in paying for data, which in turn brings more people online and can help improve their lives.*** However, ***the Global Voices report identifies a number of weaknesses in the service, including not adequately serving the linguistic needs of local populations; featuring a glut of third-party services from private companies in the US; harvesting huge amounts of metadata about users and violating the principles of net neutrality.*** "***Facebook is not introducing people to open internet*** where you can learn, create and build things," said Ellery Biddle, advocacy director of Global Voices. "***It's building this little web that turns the user into a mostly passive consumer of mostly western corporate content. That's digital colonialism.***" ***To deliver the service, which is now active in 65 countries, Facebook partners with local mobile operators. Mobile operators agree to "zero-rate" the data consumed by the app, making it free, while Facebook does the technical heavy lifting to ensure that they can do this as cheaply as possible.*** Each version is localized, offering a slightly different set of up to 150 sites and services.

Falcon, Ernesto. "Countries With Zero Rating Have More Expensive Wireless Broadband than Countries Without It." Electronic Frontier Foundation. Feb. 2019. https://www.eff.org/deeplinks/2019/02/countries-zero-rating-have-more-expensive-wireless-broadband-countries-without-it //RJ

When an ISP decides to exempt certain applications or services from cutting into a user's data cap, that's zero rating. And the evidence is in that it conclusively makes broadband more expensive. A comprehensive multi-year study by the non-profit Epicenter.works, comparing the 30 member countries of the European Union (EU) on net neutrality enforcement, has found that ***zero rating business practices by wireless carriers have increased the cost of wireless data compared to countries without zero rating***. This directly contradicts all of the assertions by major wireless carriers that their zero rating practices are "free data" for consumers. Based on the evidence, ***zero rating not only serves as a means to enhance ISPs' power over the Internet, but it's also how they charge consumers more money for wireless service***. Zero rating was originally going to be banned by the FCC under the General Conduct Rule, but when the FCC changed leadership the agency promptly green lighted and encouraged the industry to engage in zero rating practices before it began its repeal of net neutrality. EU ***countries that do not have zero rating practices enjoyed a double digit drop in the price of wireless data after a year***. In comparison, t***he countries with prevalent zero rating practices from their wireless carriers consistently saw data prices increase***. **This makes sense:** ***carriers have an incentive to raise the costs of exploring alternatives in order to make their preferred, zero-rated choice of content more attractive***. **However,** ***once that incentive is removed, the wireless carrier no longer has a reason to raise the cost of alternatives because nothing is given special treatment. In short, zero rating practices cost you more money.***

UN '18

https://www.un.org/sustainabledevelopment/blog/2018/01/worlds-vulnerable-countries-track-achieve-universal-internet-access-2020-un-report/

Furthermore, the anticipation that these countries will achieve (on average) 97 per cent mobile broadband coverage, making Internet prices relatively affordable by 2020 can translate into strong, home-grown innovation; new business opportunities; and more improvements health and education services, added Ms. 'Utoikamanu, the UN High Representative for Least Developed Countries, Landlocked Developing Countries and Small Island Developing States.

Elgan '16- targets those already online

In these early days, however, there's no evidence that most Free Basics users are new to the Internet.

When users choose Free Basics, the carrier unplugs them from the Internet and plugs them directly into Facebook's servers, a walled garden that provides the equivalent of stripped down sites, but is not the Internet. (Facebook runs all user requests through proxy servers, which ping the websites for data updates and other content.)

One difference is scale. **There are a few dozen sites on Facebook Free Basics.** For a while there were just 38, but they're continuing to grow it. These include Wikipedia, the Facts

for Life health site run by the United Nations Children's Fund, BBC News, a weather site, and typically a few local resources for each market. And, of course, Facebook.

Oberhaus '17 - 2/3rds of developing jobs can be automated

A World Bank report found that two-thirds of all jobs in the developing world face being automated out of existence, although the rate that this will happen is uncertain and "depends on the the pace of technological disruption." Moreover, despite Western fears of the coming robo-apocalypse, the report also notes that the "share of occupations that could experience significant automation is actually higher in developing countries than in more advanced ones, where many of these jobs have already disappeared."

Sample '18 - barriers preventing poor accessing the internet, internet spread slow down

The striking trend, described in an unpublished report shared with the Guardian, shows the rate at which the world is getting online has fallen sharply since 2015, with **women and the rural poor substantially excluded from education, business and other opportunities the internet can provide**.

The slowdown is described in an analysis of UN data that will be published next month by the Web Foundation, an organisation set up by the inventor of the world wide web, Sir Tim Berners-Lee. The data shows that g**rowth in global internet access dropped from 19% in 2007 to less than 6% last year**

Many of those offline are in areas that are difficult, and therefore **costly, to hook up to the internet**. **The expense puts telecoms providers off** because the communities are those least able to afford the high prices they must charge to get a return on the investment. At the same time, the **internet may have little appeal for people in the world's most remote regions. Even if they can afford the mobile phone and data costs, they may lack the skills to go online, and find little of interest in a language they know if they do**.

Ford '19 - automation will spread and destroy jobs in developing nations

There are two problems developing countries face in an AI future:

1. **Much of the work available in developing countries is relatively unskilled and routine, repetitive and predictable in nature. Work of this type is destined to be automated. This will be true in both developed and developing countries, but some economists believe the impact could be especially hard on poorer nations because a greater fraction of their workforce is engaged in work of this type.**
2. The traditional path to economic development has been to build factories which employ large numbers of unskilled workers. **As AI and robotics advance there will be less and less need for such labor-intensive factories (or for service offshoring) of**

this kind. Much of this production will end up being "reshored" to developed countries where it will be produced using highly automated facilities.

As this traditional path to economic growth begins to evaporate, this will pose a real challenge. **In fact economists have already identified what they call "premature deindustrialization" in many developing countries—in other words, companies are replacing their factory workers with automation before they have the means to do so**.

Mendes '18 - Dev Nations doing own

https://www.submarinenetworks.com/en/insights/internet-access-in-the-developing-world-more-than-just-a-connectivity-issue

The world's telecommunication and internet giants would typically be expected to have a central role in delivering these ambitious targets. **However, there is also a huge chance for emerging countries to take the lead on this challenging opportunity. For those countries willing to do so, the economic benefits would arguably be more meaningful and, ultimately, more rewarding.**

Currently, there are numerous well-known, US-based content providers with a global reach, **but up-and-coming international wholesale carriers in developing countries are becoming the "ones to watch" by creating new 'data hubs' in unexpected places. Demand for data is continuing to grow exponentially, meaning that with the right investments, these new providers have the potential to both drastically change their local economy and shift the balance of power within traffic management at a global level.**

Mendes '18 - Plenty of Funding

https://www.submarinenetworks.com/en/insights/internet-access-in-the-developing-world-more-than-just-a-connectivity-issue

That said, access to investment is not the hurdle one might expect, with funding and expertise to build these cables coming from a wide variety of sources. In 2017 and to date in 2018, $1.5 billion of investment has been made in Latin American (LATAM) submarine cable routes. For the most part, these new routes are being developed in an area which is currently known for having some of the lowest levels of connectivity in the world: the South Atlantic.

A2 M&A Good

Growth

1. Rhem 12' from McKinsey & Company explains that in the tech sector M&A's and growth have an inverse relationship. This means that M&A in tech are not a sustainable form of growth.

A2 Stopping Tech Bubble Pop

1. Non-Unique. https://www.marketwatch.com/story/roubini-10-reasons-why-conditions-will-be-ripe-for-a-financial-crisis-by-2020-2018-09-13

Rhem 12'____McKinsey & Company
Taking a longer-term look at M&A value creation
https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/taking-a-longer-term-look-at-m-and-a-value-creation

Global 1,000 nonbanking companies, median excess total returns to shareholders (TRS), Dec 1999–Dec 2010, %

■ Top strategies in industry

	Industries							
Top strategies	Consumer discretionary	Telecom	PMP[1]	High tech	CPG[1] and retail	Materials	Manufac-turing, other industrials	Insurance and related
Programmatic	4.2	4.5	3.1	–1.2	3.2	4.5	0.7	0.1
Selective	2.0	1.3	6.4	–2.6	2.5	–1.5	4.8	1.7
Tactical	0.4	0.7	N/A[2]	1.2	2.6	–3.0	1.8	2.6
Large deals	–2.8	–0.9	2.0	–6.7	3.8	–0.3	3.5	4.0
Organic	–4.2	N/A[2]	N/A[2]	–2.0	1.4	N/A[2]	–5.2	9.8

[1]PMP = pharmaceutical and medical products; CPG = consumer packaged goods.
[2]Data not shown where category contained <5 companies.
Source: Dealogic; McKinsey analysis

A2 Price Reduction

General

1. TURN: Costa '15 of the Economic Policy Institute finds that low-cost goods and services in the US come at the cost of worker exploitation as he furthers that the value of the federal minimum wage has declined 24 percent in the last 50 years.
2. Data tradeoff 3. Ads 4.

Commented [5]: https://www.epi.org/blog/true-cost-of-low-prices-is-exploited-workers/

Commented [6]: The true costs of goods and services is a secondary issue to stagnant and exploitative wages

W- Economies of Scale

W- Antitrust Fear

A2 Monopolies Innovate

General

1. Defense. Innovation is always profitable, as being the first to market with a new, innovative product will generate profit. Thus, even if split, companies still have the former resources they had as a large company to innovate, and the incentive remains.
2. Turn. Vossen of the University of Groningen empirically finds that small firms spend proportionally more and more efficiently conduct research and development than large firms.
    a. Tepper '18 of the University of North Carolina writes that while the current tech giants were once high growth companies, once they become large monopolies their growth plateaus. Large companies face increasing organizational costs from bureaucratic expenses and internal repair that soak up the capital and time needed to increase productivity.
    b. Mitelman '18 of Harvard University writes that because tech monopolies already dominate their markets they do not share the same incentives that small firms have to improve and innovate.

Thus, West '17 in his book *Scale* finds that all large mature companies in the US have stopped growing. Wu '18 of the ITIF confirms that research and development investment in the US has shifted from risky innovative research that opens new markets and creates new jobs to basic research, slowing productivity growth and causing economic stagnation. Indeed, Tepper highlights that the monopolization of the tech industry has coincided with declining productivity.

W- Economies of Scale

W- Antitrust Fear

Vossen

http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.535.4475&rep=rep1&type=pdf

Nevertheless, smaller firms that do participate in R&D, do so at higher relative levels of intensity than larger firms in the same three out of four sectors. That is, in these industries smaller firms spend more on R&D per unit of firm size. According to the underlying model the implication is that smaller firms are more R&D efficient. This conclusion is supported by other studies that found that smaller firms are more than proportionately responsible for significant innovations (e.g. Acs and Audretsch, 1990). Only in the Science Based industries no significant difference in relative R&D spending was found between small and large firms

Mitelman ‘18

Mitelman 18

Julia Mitelman, Medium, "Why Corporates Giants Can’t Innovate", Oct 14, 2018, https://medium.com/swlh/why-corporates-giants-cant-innovate-a6891565288c

Even if your company continues to experiment and embrace failure, even if it manages to maintain ‘small company’ culture, even if it stays flat and nimble, even if it’s not afraid to cannibalise its own existing businesses, innovating in corporate giants is still harder than innovating in startups. Startups are systematically designed to better handle innovation.... Startups fail and they die, while corporates must absorb the cost of failure. For those failed startups, investors are paying for failures, spread out across diverse portfolios, and with new investors and new money entering the market regularly. But corporates have a finite budget and are only invested in their own experiments, which means the stakes are higher and each experiment has a higher opportunity cost. Startups will try to make an experiment work for as long as they can, even when everyone else has stopped believing in it because their company is literally at stake (pivots are usually the last resort). Meanwhile, corporates must be mindful of how long an experiment should run before its opportunity cost becomes too high. They must choose to continue the experiment, which means they will kill experiments sooner (a rational behaviour) and thus may never find those incredible industry-shifting break-throughs. Startups have never succeeded before and so they have no benchmarks for how much they should grow and how quickly, while corporates will compare all experiments to previous successes. Successful startups will have discovered something much bigger than they expected, so they will constantly be exceeding expectations. But corporate expectations will be set higher because of their precedents, so the same experiment could seem to not meet expectations fast enough and will be killed. Thus, the corporate will consider fewer experiments, for shorter periods of time, likely missing some big wins.

Wu ‘18

http://www2.itif.org/2018-us-business-rd.pdf

Business R&D has increased more than threefold since 1980, an unusually large portion of which has gone to development, rather than to longer-term and riskier basic and applied research. Basic research is mainly exploratory, and concerns pushing the known bounds of basic scientific concepts and understanding. Applied research involves using known basic scientific concepts to solve a particular problem. Developmental research refers to developing available scientific knowledge into a commercial product or process. In other words, basic and applied research are the building blocks, while developmental research is the process of turning those blocks into “buildings.” Thus, the more building blocks are developed now, the more potential innovation in the future. From 1980 to 2014, basic and applied research increased by 244 percent, while developmental research increased by 325 percent (figure 8).

Over the past 15 years, private investment in basic and applied research has stagnated. In 1980, 30 percent of the private sector's R&D budget went to basic and applied research, but by the 2010s, this share had dropped to 22 percent (figure 10). Adjusted for inflation, businesses in 2014 invested as much in basic and applied research as they did in 2000. When looking at basic and applied research as a share of business value added, investments peaked in 1991 (0.55 percent of industry value added) and declined to 0.43 percent by 2014 (figure 9)

West '17

"This is very encouraging, but there's a potential pitfall that becomes apparent when the growth of each company is measured relative to the growth of the overall market. In that case, as can be clearly seen in Figure 70 where the overall growth of the market has been factored out, all large mature companies "have stopped growing. Their growth curves when corrected for both inflation and the expansion of the market now look just like typical sigmoidal growth curves of organisms in which growth ceases at maturity, as illustrated in Figures 15–18 of chapter 4. This close similarity with the growth of organisms when viewed in this way provides a natural segue into whether this similarity extends to mortality and whether, like us, all companies are destined to die."

Tepper

One of the big puzzles for economists has been why productivity has been so low over the past decade. Many economists have traced the collapse to a broad slowdown in innovation, others to a switch toward low-end service sector jobs, and some question whether we can even measure productivity properly. Economists in the area of growth theory have found that new companies are like little ants, carrying far more than their weight. They are responsible for innovations, opening new markets, and creating economic growth. The work of John Haltiwanger is critical to understanding the causes of job creation and economic performance. **Haltiwanger's book Job Creation and Destruction was a landmark book that showed that it was "young, high-growth startups – the ones that are experimenting, innovating new products and services and trying to figure out new business models that are disproportionately responsible for the great majority of new job creation." Even though many young firms do not succeed, they contribute to economic vitality through a churning effect.** The bad news for productivity is that as older companies employing 10,000-plus employees now

predominate employment, we're seeing the drags of exceeding the Dunbar numbers. **Huge companies require increasing bureaucracy and rules to enforce cohesion. They tend to employ more people to manage the increasing number of people. Geoffrey West, in his masterful book Scale, showed that companies are like living organisms, which has profound implications for profitability and growth. Just like in the animal world, many startups die when they are very young, but those that survive and grow quickly tend to grow exponentially, which leads to higher profitability and economies of scale. As they get older, their growth slows and they become less innovative. Large firms spend the most on R&D (after all they are much larger), but the relative amount allocated to R&D systematically decreases with their size. The funding for innovation lags the spending on bureaucratic and administrative expenses as "spending on bureaucratic and administrative expenses as companies expand.** Much like human beings, the limited energy of companies is used for the internal repair of cells rather than for growth. **When West examined the data for large companies, he found that they appear to settle down toward a slow, steady rate of growth, but reality is slightly trickier. Continuous growth sounds wonderful, but the truth becomes clear when the growth of each company is measured relative to the growth of the overall market (Figure 3.3). When you adjust for inflation "and the overall growth of the market has been factored out, all large mature companies have stopped growing.**

A2 Artificial Intelligence/Automation

W- Data

1.

Shafto '16

Shafto. "Why Big Tech Companies Are Open-Sourcing Their AI Systems." *The Conversation*, 20 Feb. 2019, theconversation.com/why-big-tech-companies-are-open-sourcing-their-ai-systems-54437. Accessed 17 June 2019.

The world's biggest technology companies are handing over the keys to their success, making their artificial intelligence systems open-source.
Traditionally, computer users could see the end product of what a piece of software did

by, for instance, writing a document in Microsoft Word or playing a video game. But the underlying programming – the source code – was proprietary, kept from public view. **Opening source material in computer science is a big deal because the more people that look at code, the more likely it is that bugs and long-term opportunities and risks can be worked out. Openness is increasingly a big deal in science as well, for similar reasons.** The traditional approach to science involves collecting data, analyzing the data and publishing the findings in a paper. As with computer programs, the results were traditionally visible to readers, but the actual sources – the data and often the software that ran the analyses – were not freely available. Making the source available to all has obvious communitarian appeal; the business appeal of open source is less obvious. **Microsoft, Google, Facebook and Amazon have been making remarkable progress developing artificial intelligence systems. Recently they have released much of their work to the public for free use, exploration, adaptation and perhaps improvement.**

A2 Foreign Competition

A2 China

1. Non-UQ. At the point where monopolies from the US and China or just China makes no difference for the majority of the world, the only unique change between the aff or neg world is that in the aff world, the harms of massively exacerbated income inequality and poverty occur to a far lesser extent than in the neg world.

A2 Tech Competition

UQ- Natural Monopolies

W- Tech Volatility Forces Innovation

1. Defense. The Economist '18 explains that current tech giants use anticompetitive means like buyouts or recruiting other firms' employees to maintain their market dominance, meaning that small firms never have the chance to reach the point of competition needed to topple these tech giants.
2. Defense. A company doesn't need to own the entire market to be profitable, companies can innovate and create new products that make money without owning the entire market.
3. Defense. In a world without huge monopolies, companies have to compete to get customers. This is always a stronger link to innovation because the companies all have to work to create the best product to gain customers.

Commented [7]: aff case card

A2 Politics

W- Lobbying/backlash

- Squo - lobbying always exists and never ending limbo that's in the media

- Big tech loses all funding in the LT and have no control over the media anymore

Argument List

Aff

- Hurts small business
  - M+A
  - Patent Abuse
  - Turn away VC
- Non-competes/contract workers
  - Pay gap for minorities
  - Income inequality general
- Data mining/privacy
- Politics - tech lobbying influence + ads
- Innovation?
- Addiction
-

Neg

- Foreign countries surpass US econ
  - Spec China
- Economies of scale
  - Lowering prices
  - Product efficiency
  - Internet Lines
- R&D harms
-

Commented [8]: p dumb but easy to cut responses to